Tritax Symmetry (Hinckley) Limited

HINCKLEY NATIONAL RAIL FREIGHT INTERCHANGE

The Hinckley National Rail Freight Interchange Development Consent Order

Project reference TR050007

Environmental Statement
Volume 1: Main Statement

Chapter 12: Ecology and Biodiversity

Document reference: 6.1.12A

Revision: 07~~6~~

~~January~~ 9 January 2024~~3~~

Planning Act 2008

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 Regulation 5(2)(a)

The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 Regulation 14

This document forms a part of the Environmental Statement for the Hinckley National Rail Freight Interchange project.

Tritax Symmetry (Hinckley) Limited (TSH) has applied to the Secretary of State for Transport for a Development Consent Order (DCO) for the Hinckley National Rail Freight Interchange (HNRFI).

To help inform the determination of the DCO application, TSH has undertaken an environmental impact assessment (EIA) of its proposals. EIA is a process that aims to improve the environmental design of a development proposal, and to provide the decision maker with sufficient information about the environmental effects of the project to make a decision.

The findings of an EIA are described in a written report known as an Environmental Statement (ES). An ES provides environmental information about the scheme, including a description of the development, its predicted environmental effects and the measures proposed to ameliorate any adverse effects.

Further details about the proposed Hinckley National Rail Freight Interchange are available on the project website:

http://www.hinckleynrfi.co.uk/

The DCO application and documents relating to the examination of the proposed development can be viewed on the Planning Inspectorate's National Infrastructure Planning website:

https://infrastructure.planninginspectorate.gov.uk/projects/east-midlands/hinckley-national-rail-freight-interchange/

Chapter Twelve ◆ Ecology and Biodiversity

INTRODUCTION

12.1 This chapter assesses the likely significant effects of the Proposed Development as described in Chapter 3: Project description (document reference 6.1.3) of this ES, on features of nature conservation value. In particular, it considers the likely effects of the Hinckley National Rail Freight Interchange (HNRFI) Proposed Development on the Important Ecological Features (IEFs) identified through the Ecology Baseline Report, which is included as Appendix 12.1 (document reference 6.2.12.1).

12.2 It has been prepared with reference to The Chartered Institute of Ecology and Environmental Management's (CIEEM) Ecological Impact Assessment (EIA) Guidelines (CIEEM, 2019). The chapter has been prepared and reviewed by experienced senior EDP Ecologists and full members of CIEEM.

12.3 This chapter describes the methods used for the assessment, a summary of the baseline conditions currently existing within the DCO Site and in its surroundings, the likely direct and indirect effects arising from the Proposed Development during construction and operation, and the mitigation measures required to avoid, mitigate or compensate likely significant adverse effects. It also provides an assessment of the potential opportunities to provide enhancements over the existing situation with likely significant beneficial effects.

12.4 This chapter should be read in conjunction with the following Appendices and other pertinent documents submitted with the DCO application:

- Appendix 12.1 - Ecology Baseline Report (document reference ~~6.2.12.1~~6.2.12.1A);
- Appendix 12.2 - Biodiversity Impact Assessment (document reference ~~6.2.12.2~~6.2.12.2A);
- Appendix 12.3 - Shadow Habitat Regulations Assessment (Phase 1) (document reference 6.2.12.3);
- Appendix 12.4 – ~~Access~~ Woodland Management Plan (document reference ~~6.2.12.4~~6.2.12.4A)
- Figure 12.1 - Statutory Designated Sites (document reference 6.3.12.1);
- Figure 12.2 - Non-statutory Designated Sites (document reference 6.3.12.2);

- Figure 12.3 - Extended Phase 1 Survey (document reference 6.3.12.3);
- Figure 12.4 - ~~Linear~~ Hedgerow Survey~~Habitats~~ (document reference 6.3.12.4);
- Figure 12.5 - Winter Bird Survey - December 2020 (document reference 6.3.12.5);
- Figure 12.6 - Winter Bird Survey - January 2021 (document reference 6.3.12.6);
- Figure 12.7 - Winter Bird Survey - February 2021 (document reference 6.3.12.7);
- Figure 12.8 - Breeding Bird Survey - April 2021 (document reference 6.3.12.8);
- Figure 12.9 - Breeding Bird Survey - May 2021 (document reference 6.3.12.9);
- Figure 12.10 - Breeding Bird Survey - June 2021 (document reference 6.3.12.10);
- Figure 12.11 - Bat Transect Routes and Static Detector Locations 2021 (document reference 6.3.12.11);
- Figure 12.12 - Bat Roost Assessment (Buildings) (document reference 6.3.12.12);
- Figure 12.13 - Bat Roost Assessment (Trees) (document reference 6.3.12.13);
- Figure 12.14 - Bat Transect Survey Results - April 2021 (Dusk) (document reference 6.3.12.14);
- Figure 12.15 - Bat Transect Survey Results - May 2021 (Dusk) (document reference 6.3.12.15);
- Figure 12.16 - Bat Transect Survey Results - June 2021 (Dusk) (document reference 6.3.12.16);
- Figure 12.17 - Bat Transect Survey Results - July 2021 (Dusk) (document reference 6.3.12.17);
- Figure 12.18 - Bat Transect Survey Results - August 2021 (Dusk) (document reference 6.3.12.18);
- Figure 12.19 - Bat Transect Survey Results - August 2021 (Dawn) (document reference 6.3.12.19);
- Figure 12.20 - Bat Transect Survey Results - September 2021 (Dusk) (document reference 6.3.12.20);
- Figure 12.21 - Badger Survey (Confidential) (document reference 6.3.12.21);
- Figure 12.22 - Great Crested Newt Survey (document reference 6.3.12.22);
- Figure 12.23 - Reptile Survey (document reference 6.3.12.23); and

- Figure 12.24 – Ecological Mitigation Proposals (document reference 6.3.12.24).

METHODOLOGY AND DATA SOURCES

Previous assessment

12.5 There is no previously prepared EIA for the Proposed Development. However, EDP prepared early environmental representations in respect of ecology and biodiversity related environmental matters, and the ecological baseline desk and field-based surveys (see Appendix 12.1, document reference 6.2.12.1) were undertaken between 2016 and 2022 i.e., prior to and during the design of the Proposed Development.

Formal statutory consultation

12.6 An EIA Scoping Opinion was received from the Planning Inspectorate (PINS) in December 2020 (ES Appendix 6.2, document reference 6.2.6.2) which included comments in relation to the Ecology and Biodiversity Section of the Scoping Report. Subsequently, a Preliminary Environmental Information Report (PEIR) was produced and specifically addressed PINS comments. The comments provided by PINS are included in Table 12.1 below with a summary of how each comment has been addressed.

12.7 This approach has ensured that the ecological and biodiversity sensitivities have influenced master planning through an iterative process. Thus, the Proposed Development incorporates a degree of integral (or embedded) mitigation designed to avoid or reduce likely ecological effects.

Table 12.1: Planning Inspectorate's comments from EIA Scoping Opinion in relation to Ecology (December 2020)

PINS Ref.	Inspectorate's comments	Action taken
ID: 4.6.2 Ref: 11.1	The Scoping Report lists a number of stakeholders that will be consulted on the scope of surveys and mitigation proposals. Hinckley and Bosworth Borough Council are missing from this list and should be consulted.	The Consultation referred to in section 11.1 is in regard to the survey scope and it would not normally be appropriate to consult the authority in whose area the Proposed Development is located on survey scope and mitigation. As the Ecology Officer for the region is part of the Leicestershire Council Ecology Team, they cover both areas and therefore the same ecologist will cover advice for a number of Councils

PINS Ref.	Inspectorate's comments	Action taken
ID: 4.6.3 Ref: Table 11.1, 11.16 & 11.22	In response to the Inspectorate's comments on the initial Scoping Report (April 2018), the Scoping Report (Table 11.1 (ID 2)) states that the study area is "to be assessed and implemented in the ES". The Scoping Report does not define the study area despite early survey work having been undertaken. Paragraph 11.22 of the Scoping Report states that the ES will review all potential impacts "within the DCO boundary and those associated with the off-site enabling works". Ecological impacts may arise at substantial distances from works. The ES should clearly explain how the study area has been defined and how it relates to the potential zone of influence of the Proposed Development. Where professional judgement has been relied on, an explanation should be provided of the factors and criteria relied on in reaching a decision.	The ecological Zone of Influence (ZOI) is fully defined within the ES chapter. It is fully accepted that there will be impacts both direct and indirect, that may arise at substantial distances from the works. This is addressed within this ES chapter. See Appendix 12.1 (document reference 6.2.12.1).
ID: 4.6.4 Ref: Table 11.1 11.20-11.22, 11.44	In response to the Inspectorate's comments on the initial Scoping Report (April 2018), the Scoping Report (Table 11.1 (ID 4)) states that the scope of the baseline surveys was agreed with both the local authority and Natural England, and that consultation will be ongoing in agreeing the scope of update surveys prior to submission. The ES should contain sufficient background information regarding the receiving environment, supported by relevant detailed surveys, to ensure all likely significant effects associated with	A detailed baseline has been undertaken and has been refreshed and the scope has been agreed with the relevant bodies. The details of the survey scope and the consultation process to agree the scope for establishing a robust baseline is provided within the ES chapter and relevant appendices (see Appendix 12.1 document reference 6.2.12.1).

PINS Ref.	Inspectorate's comments	Action taken
	the Proposed Development have been assessed. Changes made to the scope of baseline surveys made as a result of consultation should be documented in the ES.	
ID: 4.6.5 Ref: Table 11.1, 11.22, 11.44	In response to the Inspectorate's comments on the initial Scoping Report (April 2018), the Scoping Report (Table 11.1 (ID 5)) states that potential environmental impacts and effects are to be assessed and implemented within the ES. A description of the impacts and effects that may be associated with the Proposed Development should be set out within the ES. Any likely significant effects from off-site enabling or highways works should also be identified as part of this assessment.	Both the impacts from the Proposed Development and any enabling works and highways works are assessed within the ES chapter (see paragraph 12.132 onwards).
ID: 4.6.6 Ref: Table 11.1	In response to the Inspectorate's comments on the initial Scoping Report (April 2018), the Scoping Report (Table 11.1 (ID 6)) states that pre-mitigation effects which will take account of measures included in the draft Ecological Construction Method Statement and any 'embedded mitigation' is to be assessed and implemented within the ES. The ES should make it clear exactly which measures have been taken into account in reaching conclusions on the significance of effects from the Proposed Development.	The ES clearly sets out which measures have been considered within the assessment to allow the full significance of effects to be concluded.
ID: 4.6.7 Ref: Table 11.1	In response to the Inspectorate's comments on the initial Scoping Report (April 2018), the Scoping	The ES has clearly identified the likely impacts that could arise from the Proposed Development on all

PINS Ref.	Inspectorate's comments	Action taken
	Report (Table 11.1 (ID 7)) states that the likely impacts from the Proposed Development during the construction and operational phases on nationally designated sites within the Zone of Influence of the Proposed Development are to be assessed and any mitigation implemented within the ES. There is little detail within the Scoping Report to explain the approach that will be taken. The ES must clearly identify the likely impacts from the Proposed Development during the construction and operation phases, explaining any necessary mitigation and any residual impacts.	designated sites within the DCO site's ZOI. This is set out for both the construction phase and operational phase and this chapter sets out the mitigation that will be implemented to reduce or remove these impacts and what the overall residual impact will be.
ID: 4.6.8 Ref: 11.19, 11.22 Table 11.2 Figures 11.1 and 11.2	The IEFs that are identified in the Scoping Report should be set out in detail in the ES. The ES should show how these IEFs and other key findings were identified, including the consultation carried out with consultees such as local authorities and Natural England. Figures 11.1 and 11.2 do not show the full extent of the red line boundary of the Proposed Development or the study area. The figures in the ES should clearly set out how identified IEFs and habitats relate to the chosen study area and relative distances from the red line boundary of the Proposed Development. All off-site works should be identified in the figures in relation to the identified IEFs and habitats.	The IEFs within the red line are identified and set out in detail within the ES and Baseline Report (see Appendix 12.1, document reference 6.2.12.1). This includes IEFs within areas outside the main order limits and within the entire DCO boundary.
ID: 4.6.9	Indirect construction and operational impacts without	The potential for offsite impacts is fully cross referenced with other

PINS Ref.	Inspectorate's comments	Action taken
Ref: 11.26, 11.28	mitigation measures and potential off-site effects from pollution/contamination, potential road traffic collisions with species and any other indirect or off-site effects should be cross referenced clearly to the relevant aspect chapters in the ES and form part of the assessment.	chapters to ensure that there is consistency throughout.
ID: 4.6.10 Ref: 11.42	The mitigation strategy provisionally outlined in the Scoping Report should be set out in full in the ES, providing full details of the mitigation required to address any likely significant effects. Any monitoring required for the mitigation should also be set out in the ES. The ES should indicate how these measures will be secured through the DCO.	The mitigation strategies including how the measures will be secured are set out within the ES chapter (see paragraph 12.200 onwards).
ID: 4.6.11 Ref: 11.43	The Scoping Report states that the ongoing management, maintenance and monitoring of the IEFs and newly created habitats would be managed through the LEMP. The LEMP should be clearly set out and it should be clear how the LEMP provisions are to be secured through the DCO.	A Landscape and Ecological Management Plan (LEMP) has been submitted as part of the DCO application (document reference 17.2). This will be secured through a DCO requirement.
ID: 4.6.12 Ref: n/a	Given the nature of the development and proximity to ancient woodlands, the Inspectorate considers the ES should assess the impacts of the inadvertent spread of pests and diseases to ecological receptors where significant effects are likely to occur. The consultation response from the Forestry Commission is highlighted in this	This aspect of the potential impacts has been incorporated into the ES chapter.

PINS Ref.	Inspectorate's comments	Action taken
	regard.	

12.8 Comments in relation to the Ecology and Biodiversity Section of the EIA Scoping Report were also received from a range of other consultees and relevant stakeholders. These comments are included in Table 12.2 below together with details of how each comment has been addressed.

Table 12.2: Other Consultee Comments received in response to EIA Scoping in relation to Ecology (December 2020)

Consultee	Comments	Action taken
Burbage Parish Council	It is noted that the Scoping Report has recognised the importance of the Burbage Wood and Aston Firs SSSI. This area of woodland is immediately adjacent to the Proposed Development and the development could pose a severe threat to the wellbeing of this area. The ES should assess the full impact of the development upon the SSSI including knock-on ecological impacts of removing such a large area of farming land immediately adjacent to the woodland. The ES should consider the potential for pollution of the local water courses, particularly during construction activities.	The impacts on the Site of Special Scientific Interest (SSSI) have been fully assessed within the ES chapter.
Elmesthorpe Parish Council	The impact on the local environment, and Elmesthorpe Plantation, which is within the Parish and is part of Aston Firs	The impacts on the SSSI and adjoining woodlands have been fully assessed within the ES chapter.

Consultee	Comments	Action taken
Forestry Commission	Our main considerations were covered in our previous response dated 27th March 2018 concerning the impact on the adjacent ancient woodlands; Burbage Wood, Aston Firs, Freeholt Wood and Sheepy Wood.	The impacts on the adjacent Ancient Woodland are fully assessed within the ES Chapter
	One area remains which was raised in our original submission that has not been addressed; this relates to the issue of Biosecurity. Whilst there isn't currently applicable legislation it is essential given the proximity of not just ancient woodlands but footpaths to this site, that the issue of biosecurity risks are taken seriously and assessed. An assessment may alter where elements of the Proposed Development are located.	The full impacts on the woodland are assessed within the access and monitoring strategy including biosecurity.
Hinckley and Bosworth Borough Council (HBBC)	11.1 references an Ecological Impact Assessment (EcIA) for the development site, will one of these be undertaken for Burbage Common and Woods, as the site is of National importance's in terms of their ecology, habitats and species, and also, with its location being directly adjacent to the development? Paragraph 11.1 notes that EDP will consult with a number of stakeholders on the scope of surveys and recommended mitigation. HBBC don't seem to be included in the list of consultees within this section and The Borough Council requests to be added to the list of consultees. More details are required on how wildlife corridors will be maintained throughout the development site to	The EcIA has been undertaken for the Proposed Development including its potential impacts on the Burbage Common and Woods. The consultation referred to in section 11.1 is in regard to the survey scope and it would not normally be appropriate to consult outside the relevant authorities on survey scope and mitigation, however in this instance the Leicestershire County Ecologist Sue Timms was consulted who covers consultations for the County and therefore covers the various councils. Details on wildlife corridors are provided within the ES chapter.

Consultee	Comments	Action taken
	ensure links to Burbage Common and woods and the surrounding countryside. Burbage Common needs to be included within the EcIA in order to establish baseline data, so to assess the short- and long-term environmental impact to this sensitive site.	The impacts on the Burbage Common are fully assessed within the ES chapter.
	Chapter 11 refers to completing a Phase 1 Habitat Study, including desk-based assessment. The Borough Council has recently prepared a Phase 1 study to inform the emerging Local Plan (May 2020). The study will provide valuable evidence regarding the quality of existing habitats within the borough and makes several recommendations for mitigation and habitat creation and enhancements, particularly at Burbage at Woods and Aston Firs SSSI and Burbage Common LWS. The study informed the GI Strategy and both studies should be used to inform the ecological impact assessment and package of mitigation/enhancements which will contribute towards delivering and, where possible, maximise opportunities for biodiversity enhancement and net gain, referred to in paragraph 11.41 of the SR.	The Council's Phase 1 Survey and Green Infrastructure (GI) strategy are reviewed and referred to within the ES assessment and where possible the package of mitigation and enhancement aims to be coherent and complimentary with these documents to ensure maximum opportunities for biodiversity.
Leicestershire County Council	A generic response regarding Ecology and Biodiversity and assessment methodology. No specifics made for this Site.	No further action required. All relevant aspects of the generic advice have already been followed.

Consultee	Comments	Action taken
Natural England	Many generic recommendations again that have been undertaken. Nothing specific stated other than regards required in relation to the Burbage Common Woods and Aston Firs SSSI	Similar response to that within the Discretionary Advice Service (DAS) consultation and the recommendations within that document have been followed through.
	Biodiversity net gain is a demonstrable gain in biodiversity assets as a result of a development project that may or may not cause biodiversity loss, but where the final output is an overall net gain. Net gain outcomes can be achieved both on and/or off the development site and should be embedded into the development process at the earliest stages.	The Proposed Development has taken due regard to the provision of biodiversity net gain throughout, and it is demonstrated through the use of appropriate matrices how net gain will be achieved.
Stoney Stanton Parish Council	83. Section 11.1 needs to include Hinckley and Bosworth District Council and Warwickshire County Council as the site borders each and the impact of the development will cover all areas. 84. Section 11.4 states the term "important" as per the Hedgerow Regulations but fails to state how "important" will be assessed. 85. Section 11.10 states the local policy that has been assessed but doesn't include the Fosse Villages Local Plan where some of the development falls. 86. Table 11.2 has a section that refers to 'Badger' that appears redacted. In the interests of the document there should be no redacted sections. 87. Section 11.28 recognises the impact of the lighting pollution and other impacts on the site, but not on the	83. The consultation referred to in section 11.1 relates to the survey scope and it would not normally be appropriate to consult these two councils on survey scope and mitigation, however, in this instance the Leicestershire County Ecologist Sue Timms was consulted who covers consultations for the County and therefore covers various councils including HBBC. For clarity, the Order Limits do not fall within Warwickshire's jurisdiction, whereas significant effects on the receptors outside of the DCO limits (which do fall within Warwickshire's jurisdiction) have been scoped out. As such, it is not considered appropriate to consult Warwickshire Ecological Services.

Consultee	Comments	Action taken
	ancient woodland or sites on the immediate border to the site that will be dwarfed by the development. 88. Figure 11.2 shows areas that either have existing wildlife sites or potential to become wildlife sites. There are sections of land that are shown where the landholder has not been contacted or involved in these proposals. There is no indication within the report that details what the scope and legal standing of these proposed local wildlife sites would be.	84. The assessment of 'importance' for the hedgerow regulations is defined within the Hedgerow Regulations 1997. 85. The Fosse Villages Local Plan has been reviewed during the assessment process to ensure compliance. 86. The locations of sensitive information including those of Badgers setts, and signs will be redacted on public documents as the information is sensitive and remains a concern for the welfare of the species due to badger baiting. If the unredacted information is truly required, then it can be requested. 87. The impacts of lighting, noise and traffic on retained and newly created habitats, including adjacent, offsite habitats, are recognised and are fully assessed. 88. The proposed Local Wildlife Sites shown on figure 11.2 within the previous submissions were not proposed as part of the development, but are designated by Leicestershire County Council. They are sites that have been identified by the Council as having potential, and the Council will have their own process to follow with regards to notifying landowners. Therefore, the owners of these sites would not have been

Consultee	Comments	Action taken
		contacted by the Applicant.

12.9 A formal statutory consultation on HNRFI under section 42 took place between 12 January 2022 and 08 April 2022. As part of this consultation, the PEIR was circulated to consultees and stakeholders. Comments received which are pertinent to this chapter are included and responded to within Table 12.3 below.

Table 12.3: Statutory Consultation Comments specifically in relation to ecology and biodiversity

Consultee	Comments	Response
Woodland Trust	Comments regarding potential impacts arising from development including fragmentation as a result of the separation of adjacent semi-natural habitats, such as small wooded areas, hedgerows, individual trees and wetland habitats.	This chapter of the ES includes the information with regards to protection of the ancient woodlands and the relevant SSSI. The landscape strategy has been designed to provide buffer habitat to the areas of ancient woodland and the SSSI. These areas will be planted sympathetically to enhance the edge structure of the ancient woodlands with areas of wetland habitat, woodland planting areas of ecotone (woodland edge transition) habitat and trees to provide greater connectivity to natural habitats.
	Comments regarding potential impacts arising noise, light and dust pollution occurring from adjacent development, during both construction and operational phases.	Potential impacts from noise, light and dust pollution have been fully assessed within this ES. Further details are included within the Construction Environment Management Plan (CEMP), (document reference: 17.1), which includes specific mitigation measures to ensure that noise, light and dust deposition during the construction phase will not adversely affect the areas of ancient woodland. The

Consultee	Comments	Response
		Noise Chapter (document reference 6.1.10) of the ES sets out the noise mitigation measures that will be implemented as part of the proposals for the operational phase and these are discussed further below. The Lighting Strategy (Appendix 3.2, document reference 6.2.3.2) and Obtrusive Light Technical Note (Appendix 3.2.1, document reference 6.2.3.2.1) looks at the operational impacts of lighting within the development as well as the potential construction lighting impacts.
	Where the wood edge overhangs new road networks, trees can become safety issues and be indiscriminately lopped/felled, resulting in a reduction of the woodland canopy and threatening the long-term retention of such trees.	There are no areas of the new road network that come within close proximity to the canopy edge of the areas of ancient woodland or other areas of the woodland adjacent to the Order Limits that could result in safety issues for the road network.
	Adverse hydrological impacts can occur where the introduction of hard-standing areas and water run-offs affect the quality and quantity of surface and ground water. This can result in the introduction of harmful pollutants/contaminants into the woodland.	This ES includes a full assessment of the hydrological impacts of the development within Chapter 14 (document reference 6.1.14). A detailed Sustainable Drainage System (SuDS) scheme is proposed that will ensure that the introduction of harmful pollutants/contaminants is mitigated and controlled.
	It is noted that a buffer zone of 25 metres has been afforded to Freeholt Wood. However, given the scale of the proposals, the woodland trust is of the opinion that a larger buffer zone of at	The Development Proposals ensure that a buffer of at least 50m is provided for most of the areas of ancient woodland and woodland within the SSSI. There is one pinch point area to the north of Freeholt

Consultee	Comments	Response
	least 50 metres should be provided to prevent adverse impacts such as pollution and disturbance and ensure avoidance of root damage.	Wood, where there will be engineering works up to the 25m offset, but the distance to the hard surface of the road has been kept at the 35m offset. All works are well outside the root protection zone for the ancient woodland. As above, specific measures are outlined below and within the relevant appendices to ensure adverse impacts of woodland are fully avoided or mitigated. In addition, a soft edge and buffer planting will be provided in this location, resulting in a species-rich ecotone habitats (thus providing further screening and protection). The engineered bank down to the road will also be planted with native shrubs to again add further screening and buffering from the road.
	An arboricultural impact assessment should be undertaken ahead of the Development Consent Order application process, to ensure that any ancient and veteran trees within proximity to the proposals are identified and accounted for, as this will ensure that appropriate protection can be incorporated into the scheme design.	A full arboricultural survey has been carried out and the findings have informed the design process. The ES includes a full arboricultural impact assessment, see Appendix 11.4 (document reference 6.2.11.4) which details the findings of the survey and the impact assessment and provides a robust mitigation package to ensure that impacts are mitigated or compensated where required.
Forestry Commission	The Forestry Commission have asked for clarity on the impacts on the areas of Ancient woodland and the Burbage Wood and Aston Firs SSSI whether they would be insignificant or significant.	Both the PEIR and this ES chapter suggest that there could be a significant impact on the SSSI and the areas of ancient woodland without the use of appropriate mitigation. Table 12.8 below shows that the residual effects (with mitigation) for the SSSI and areas of ancient woodland will be 'no significant

Consultee	Comments	Response
		effect'.
	The Forestry Commission expects that the impacts on the Ancient Woodlands are comprehensively assessed during the EIA using the Standing Advice and suitable plans put into place to prevent damage during the construction and operational phase.	Impacts on the Ancient Woodland have been comprehensively assessed through this EIA. The mitigation measures will be further detailed within the CEMP, LEMP, Ecological Mitigation and Management Plan (EMMP) and ~~Woodland Access Management Plan~~Woodland Management Plan which form the appendices to this ES chapter during the operational phase.
The Environment Agency	We support the implementation of Biodiversity Net Gain (BNG) and the use of the DEFRA Biodiversity Metric as part of the proposed development. The wet ditches and stream Habitats have been omitted from Appendix 12.2: Biodiversity Impact Assessment (BIA) Calculations edp3267_r033a' without a justification for this omission being provided. These features are not listed in section 2.2 'Existing habitats', despite being refenced elsewhere in the submission. Further, a 'net loss' in stream habitat has been identified in paragraph 12.220 of the 'Ecology and Biodiversity' report. Wet ditches and stream habitats should be included in the BIA calculations to provide an accurate and correct assessment of Biodiversity Net Gain at the site. The 'BIA Calculation' report,	The Biodiversity Impact Assessment (BIA) provided at Appendix 12.2 (document reference 6.2.12.2) sets out the Biodiversity Net Gain (BNG) for the Order Limits and details how BNG has been achieved for the project. This includes an assessment of hedgerow, stream and wet ditch habitat (i.e. linear habitat). The onsite habitats have been designed to maximise benefits where possible. An area of potential offsite mitigation land is included within the BIA but in close proximity to the Order Limits and the areas associated with the common and SSSI. The CEMP has been produced taking into consideration the feedback received from the Environmental Agency (EA).

Consultee	Comments	Response
	paragraph 12.218 confirms that 10% net gain has not been achieved on-site at present following DEFRA Metric 3.0 (Version date: 07/09/2021) calculations. It is understood that this will be made up for in off-site gains. We understand that BNG will be considered at design stage, however, we strongly recommend that BNG should be discussed and resolved at the earliest opportunity in the development process to ensure targets are met, and that efforts are made to achieve BNG on-site where possible, and follow the mitigation hierarchy: avoid, mitigation, compensation. Off-site compensation should only be considered as a last resort to supplement on-site gains.	
Leicestershire and Rutland Wildlife Trust (LRWT)	The LRWT question if green/brown roofs have been considered.	The use of green and brown roofs has been considered and looked at in detail as well as the possibility of using green walls and the use of green fences. However, given the complexity of the building structures and the required infrastructure, at this stage it is not possible to confirm their inclusion. The design evolution for the Proposed Development is addressed in chapter 4 of this ES (document reference 6.1.4) and through the Design and Access Statement (document reference 8.1). It is possible that the use of green/brown roofs and walls could be looked at in further detail when the desires of the potential end users are known.

Consultee	Comments	Response
	Further details regarding invertebrate surveys are requested.	Further details on the invertebrate surveys carried out within the Main Order Limits are included within the baseline report (Appendix 12.1, document reference 6.2.12.1). These surveys have been used to look further at the potential impacts on invertebrate as part of the Proposed Development and to provide further targeted mitigation. The final LEMP submitted as part of the DCO application provides details for the landscape and ecology designs for the HNRFI.
	The LRWT question if the LED impacts on moths have been considered.	A lighting strategy and impact assessment are provided within the with this ES. The lighting strategy (Appendix 3.2, document reference 6.2.3.2) ensures that lighting impacts are limited in extent and will be designed to ensure that the most appropriate lighting is used.
Elmsthorpe Parish Council	The impact of the proposed development on local wildlife has attracted widespread comment from residents. It is generally felt that whilst surveys may have been undertaken, they have failed to translate into any meaningful proposals to offset the extensive damage to the local ecology which is expected to result from this proposal. Furthermore, residents feel that the surveys have underestimated the extensive wildlife in the area. Accordingly, the Parish Council would question this being an	This chapter sets out how the mitigation for the habitats and species will be implemented and managed, and includes an EMMP and LEMP. These detail the methodologies for protection of habitats and species and then their future management respectively. A BNG strategy has been devised that will ensure that net gains for biodiversity can be delivered, this has focused on providing the gains in or within close proximity to the Main Order Limits. Where possible the proposals have

Consultee	Comments	Response
	ecologically friendly project. As an example, the earlier site designs included bunding on the north east boundary of the site with Burbage Common Road which the Parish Council understood was to be landscaped in such a way as to encourage flora and fauna to flourish. The current designs indicate that this bunding is being replaced with an 8 metre high solid fence and railway sidings. The proximity of the proposed development to Burbage Common and Woods is likely to cause significant damage to the variety of wildlife in the area. There are specific concerns regarding the impact on the migratory routes of the roe deer. There are also concerns regarding the impact of the construction and subsequent lighting of the A47 link road. It is generally felt that the provision of a green area as an extension to Burbage Common will not be sufficient to offset the loss of natural habitat for the wildlife as the construction work alone will drive much of the wildlife away and it may never return. Further, the value of a green area close to the new A47 link road is considered to be limited. It is also felt that the new areas of ecological enhancement will not be suitable replacements for the	aimed to reduce biodiversity impacts through appropriate layout and have looked at the onsite provision to ensure that the biodiversity gains can be maximised 'on-site'. 'Off-site' compensation will be provided in the closest area possible to DCO site in order to provide the gains required in the locality. The full BIA sets out all the measures that have been put in place in order to ensure that the BNG requirements are met. The BIA is provided in the ES at Appendix 12.2 (document reference 6.2.12.2). A lighting strategy (document reference 6.2.3.2) has been submitted which demonstrates that sufficient mitigation can be implemented to ensure there is no adverse impact on the SSSI, as with the air quality assessment.

Consultee	Comments	Response
	long-established habitats which are being built on. There are concerns that the land drainage proposals will have a devastating effect on the ecosystems in the existing watercourses as they are sensitive to changes in the water levels. The effects will extend not only to the smaller organisms present in the water, but also the fish, dragonflies and water birds including the kingfishers. The Parish Council understands that there are water voles close to the development site and bearing in their rarity, would like details about the steps that will be taken to protect them from any damage to their habitat. A number of residents have commented on the destruction of farm land which is currently growing arable crops or being used for the grazing of livestock.	

12.10 Public consultation (Section 47) also took place between 12 January 2022 and 08 April 2022. Comments received which are pertinent to this chapter are included and responded to within Table 12.4 below.

Table 12.4: Summary of Section 47 Responses specifically in relation to ecology and biodiversity

Summary of responses	Response
Impacts on Wildlife	A comprehensive suite of surveys for wildlife have been carried out to inform the Ecological Impact Assessment. Mitigation packages are proposed as set out within the EMMP (document reference 17.5).
Impacts on Burbage Common and Woods	The impact of the Development Proposals on Burbage Common and Woods has been fully assessed and will result in no adverse ecological impacts.
Loss of Trees	An assessment of tree loss and retention has been undertaken in the Arboricultural Impact Assessment
How can you improve on Nature?	An arable landscape is not fully natural in the first place, it is an intensively managed landscape. However, noting the loss of habitats, a comprehensive biodiversity mitigation package has been put together and the scheme has been designed to maximize gains for biodiversity where possible. An LEMP will provide long term management that will focus on the provision for biodiversity.
Biodiversity Impact Assessment	A Biodiversity Impact Assessment has been undertaken with every effort made to create new habitats on site and ensure that the offsite mitigation is provided in the closest location to the development site to help provide benefits to the flora and fauna in proximity to the site.
Impacts on Narborough Bog	Potential impacts on designated sites have been fully assessed within this chapter. Potential impacts on Narborough Bog SSSI have been scoped out as it is sufficiently distant from the Order Limits not to be at risk of any adverse effects from the proposed development, including air pollution.

Guidance/best practice

12.11 The identification and evaluation of IEFs for the purposes of EIA, and the assessment of significant adverse or beneficial effects on IEFs, will be undertaken with reference to the CIEEM 'Guidelines for Ecological Impact Assessment in the UK and Ireland', September 2018 (Version 1.1, updated September 2019).

12.12 In addition, the following guidance documents have been used to inform the assessment:

- Advice Note 7: Environmental Impact Assessment: Preliminary Environmental

Information, Screening and Scoping (PINS, 2015a);

- Advice Note 9: Rochdale Envelope (PINS, 2012);
- Advice Note 10: Habitats Regulations Assessment relevant to nationally significant infrastructure projects (PINS, 2017a);
- Advice Note 12: Transboundary Impacts and Process (PINS, 2015b);
- Advice Note 17: Cumulative effects assessment relevant to nationally significant infrastructure projects (PINS, 2015c);
- Advice Note 18: The Water Framework Directive (PINS, 2017b); and
- The Design Manual for Roads and Bridges (DMRB) Volume 11: Environmental Assessment (and updates) (Highways Agency et al. 2008).

12.13 The following best practice guidance in relation to survey techniques and mitigation measures has been taken into account:

- British Standards Institute (2013) BS 42020 – Biodiversity – Code of Practice for Planning and Development;
- Joint Nature Conservation Committee, (2010). Handbook for Phase 1 habitat survey: A Technique for Environmental Audit;
- Marchant, J. H. (1983). Common Birds Census Instructions. BTO, Tring. 12pp.;
- Marchant, J. H., Hudson, R., Carter, S. P. & Whittington, P. A. (1990) Population Trends in British Breeding Birds. BTO, Tring;
- Gilbert, G., Gibbons, D. W. & Evans, J. (1998) Bird Monitoring Methods. RSPB, Sandy, Bedfordshire;
- English Nature, (2004). Bat Mitigation Guidelines;
- Collins, J. (ed.) (2016). Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London;
- Joint Nature Conservation Committee, (1999). Bat Workers Manual;
- Stone, E.L. (2013) Bats and lighting: Overview of current evidence and mitigation;
- Dean, M., Strachan, R., Gow, D. and Andrews, R. (2016). The Water Vole Mitigation Handbook (The Mammal Society Mitigation Guidelines Series). Eds Fiona Mathews and Paul Chanin. The Mammal Society, London;
- Harris, S., Cresswell, P., and Jeffries, D.J. (1989). Surveying Badgers, Mammal Society, London;

- Froglife. (1999). Reptile survey: an introduction to planning, conducting and interpreting surveys for snake and lizard conservation. Froglife Advice Sheet 10, Froglife, Halesworth;
- Gent, T., Gibson, S. (1999). Herpetofauna Workers Manual. JNCC;
- English Nature, 2004. Reptiles: Guidelines for Developers;
- National Rivers Authority (1992). River Corridor Surveys. Conservation Technical Handbook Number 1. NRA, Bristol; and
- Environment Agency (2003). River Habitat Survey in Britain and Ireland. Field Survey Guidance Manual: 2003. Bristol.

12.14 In relation to EIA and assessment of significant effects, CIEEM guidance (CIEEM, 2018) highlights that:

'A significant effect does not necessarily equate to an effect so severe that consent for the project should be refused planning permission. For example, many projects with significant negative ecological effects can be lawfully permitted following EIA procedures as long as the mitigation hierarchy has been applied effectively as part of the decision-making process.'

12.15 Guiding principles for delivering net biodiversity gain through developments is also provided in separate CIEEM guidance (~~2018~~July 2021).

Baseline data collection

12.16 The baseline ecological information collated for the Main Order Limits (including species scientific names) is set out in detail within Appendix 12.1, (document reference 6.2.12.1). The appendix details the full methodologies employed, their findings and any limitations. It seeks to identify the IEFs within the project's ecological ZOI and defines the ZOI for different receptors (Appendix 12.1, (document reference 6.2.12.1)).

12.17 A summary of the baseline investigations undertaken across the Main Order Limits is provided below:

- Desk study (February 2016 and November 2021);
- Extended Phase 1 Habitat Survey (June 2017, June 2018 and July 2021);
- Hedgerow walkover survey (June 2017 and June 2021);
- Wintering bird surveys (January, February and March 2018 and December 2020, January 2021 and February 2021);
- Breeding bird surveys (April to June 2018 and April to June 2021);
- Tree and building inspections for bats (April and May 2018, May 2019 and May 2021;

- Bat building emergence and re-entry surveys (May to August 2018, May to September 2019 and May to August 2021);
- Bat activity surveys (April to September 2018, 2019 and 2021) including manual transects and static detector deployment;
- Otter and water vole surveys (May and August 2018 and July 2021);
- Badger surveys (July and November 2018 and September 2021);
- Great crested newt eDNA and aquatic surveys (April to June 2018) further eDNA surveys were undertaken in July 2019 and May 2021);
- Reptile surveys (May to September 2018 and April to October 2021); and
- Invertebrate surveys (Scoping survey May 2018 with detailed surveys in March 2019, February 2021 and July 2022).

12.18 As detailed further in Appendix 12.1, (document reference 6.2.12.1), and referenced where appropriate, the scope of survey work was informed by the information derived from the initial surveys undertaken within the Main Order Limits, and in consultation with Leicestershire County Council (LCC) and Natural England (NE) (as described further in Section 12.20 below). The reasoning behind certain surveys being 'scoped out' due to not being considered necessary or appropriate in this case, is also provided in Appendix 12.1, (document reference 6.2.12.1).

12.19 All surveys were undertaken with reference to best practice guidance where available. Any limitations in the survey work are detailed in Appendix 12.1, (document reference 6.2.12.1) and summarised below. Where relevant any such limitations have been factored into the assessment process.

12.20 Following the assessment and design process a number of junctions and rail and highway works are required away from the Main Order Limits. These areas of land have been subject to further Phase 1 surveys and appropriate Phase 2 surveys where required. Whilst the impacts on these areas of land are minimal, the associated effects have been fully assessed within this ES Chapter.

Consultation

12.21 The views of the Local Planning Authority (LPA) Ecologist (covered by the LCC Ecologists), NE and the EA were sought in respect of likely ecological sensitivities pertaining to the DCO Site during the formal screening/scoping stage as described above.

12.22 In addition, further consultation was undertaken with NE and LCC Ecologists in respect of likely ecological sensitivities pertaining to the Main Order Limits and wider DCO limits and the necessary scope of surveys agreed.

12.23 A DAS request was made to NE in July 2018 to share provisional survey results and assessment of the value of on-site ecological receptors. NE's response was received on 15 August 2018. This document has been shared with HBBC as part of the Scoping exercise. The habitats and species composition have not materially changed since the initial DAS request. Further consultation through the Scoping process has confirmed similar advice as to that provided within the DAS request and therefore no specific consultation has been undertaken with NE (other than through typical screening procedure).

12.24 The NE advice also recommends carrying out a BIA calculation, using the DEFRA Metric, to allow for an objective assessment of biodiversity impacts and the degree of net gain or loss. This is now a standard part of an ecological assessment of proposed development. Appendix 12.2 (document reference 6.2.12.2) includes the BIA methodology, results and conclusions for the Proposed Development.

Assessment methodology

Ecological Zone of Influence or Spatial Scope (Study Area)

12.25 The extent of the study area has been defined as the ecological ZOI of the EIA Project. This has been determined through a review of the baseline ecological conditions relative to the Proposed Development in the context of the proposed activities. It has also been informed by liaison with consultees and other specialists involved in assessing the effects in other disciplines of the Proposed Development.

12.26 The scope of the desk study reflects the sensitivity and value of potential ecological receptors while providing contextual information to assist with determining and evaluating the baseline. The following desk study search radii around the Main Order Limits were employed and are considered to be sufficient to cover the ecological ZOI of the project:

- International statutory designations (15km radius);
- National statutory designations (5km);
- Non-statutory local sites (3km);
- Annex II bat species records (6km); and
- All other protected/notable species records (3km).

12.27 The field surveys undertaken to inform the assessment cover the Main Order Limits and, where access was permitted/available, the surrounding habitats to provide contextual information to further inform the assessment.

Ecology and biodiversity evaluation

12.28 An evaluation of IEFs has been made with reference to CIEEM's Ecological Impact Assessment Guidelines (CIEEM, 2018). A summary of the evaluation approach is provided below.

12.29 The guidelines advocate an approach to valuing features that involves professional judgement based on available guidance and information, together with advice from experts, who know the locality of the project and/or the distribution and status of the species or features that are being considered.

Designated sites

12.30 Some sites have already been assigned a level of nature conservation value through designation, and the guidelines recommend that the reasons for this designation need to be taken into account in the assessment.

12.31 Where a feature has value at more than one designation level, its overriding value is that of the highest level.

12.32 Statutory designations represent the most significant ecological receptors, being of recognised importance at an international and/or national level. Statutory designations of International/European importance include Special Protection Areas (SPA), Special Areas of Conservation (SAC) and Ramsar Sites. Statutory designations of National importance include Sites of Special Scientific Interest (SSSI) and National Nature Reserves (NNR). Although Local Nature Reserves (LNR) are statutory, their level of importance is typically County level or less, consistent with non-statutory designations, and are therefore considered alongside non-statutory sites.

12.33 Non-statutory designations are also commonly referred to in planning policies as 'local sites', although in fact these designations are typically considered to be of importance at a County level. In Leicestershire, such designations are named Local Wildlife Sites (LWS). Leicestershire also uses a system of cLWS and pLWS. Additionally, Ancient Semi-Natural Woodland (ASNW) should be considered at this level where it is not covered by other designations, such as LNR.

Biodiversity

12.34 The guidelines state that there are various characteristics that can be used to identify ecological resources or features likely to be important in terms of biodiversity and that consultation, especially with local specialists, can be crucial for identifying less obvious important resources and features.

Habitats

12.35 The guidelines recommend that the value of areas of habitat and plant communities should be measured against published selection criteria where available. Where areas of a habitat or plant community do not meet the necessary criteria for designation at a

specific level, the guidelines recommend that the ecologist may consider the local context if appropriate.

Species

12.36 The guidance deals with species that need to be assessed because they are of biodiversity value, rather than because they are legally protected (although some species may be legally protected as well as being of biodiversity value).

12.37 In assigning value to a species, it is necessary to consider its distribution and status, including a consideration of trends based on available historical records. The valuation of populations should make use of any relevant published evaluation criteria.

Geographical scope

12.38 The guidelines recommend that the value or potential value of an ecological resource or feature should be determined within a defined geographical context, and the guidelines provide a geographical range ('frame of reference') that can be adapted. The geographical frame of reference used in this assessment, based upon the CIEEM guidelines, is as follows:

- International value (SACs, SPAs, Ramsar sites);
- National value (SSSIs and NNRs);
- County value (within Leicestershire: e.g. LNRs, LWSs, ancient woodlands, atypical and diverse species assemblages with good population sizes);
- District value (within the Blaby District or Borough of Hinckley and Bosworth) e.g. watercourses, ponds, hedgerows, woodland – where species rich/extensive/atypical examples are present – moderate population sizes or species assemblages with moderate to high diversity);
- Local value (within the local parish or similar: e.g. watercourses, ponds, hedgerows, woodland – common and widespread species with relatively moderate populations and relatively limited diversity);
- Site value (the Main Order Limits and immediate environs: small areas of common habitats such as grassland and scrub – common and widespread species with small populations and limited diversity); and
- Negligible value (typically applied to areas of open ground/built development/areas of hardstanding).

Assessment of likely impacts

12.39 The guidelines advocate an approach to assessing likely impacts that involves professional judgement based on available guidance and information.

12.40 The assessment of the likely impacts of the Proposed Development takes into account both on-site impacts and impacts that may occur to adjacent and more distant ecological features. Impacts can be permanent/temporary, direct or indirect, positive or negative and can include:

- direct loss of wildlife habitats;
- fragmentation and isolation of habitats;
- disturbance to species from noise, light or other visual stimuli;
- changes to key habitat features; and/or
- changes to the local hydrology, water quality and/or air quality.

12.41 The significance of a negative effect (or a positive effect) is the product of the magnitude of the impact and the value or sensitivity of the nature conservation features affected. In order to characterise the impacts on each feature, the following parameters are taken into account:

- the magnitude of the impact;
- the spatial extent over which the impact would occur;
- the temporal duration of the impact;
- whether the impact is reversible and over what timeframe; and
- the timing and frequency of the impact.

Criteria for assessment

12.42 There is no agreed absolute method for assessing the significance of negative or positive impacts on nature conservation features. In addition, since the purpose of an EIA is to focus on likely significant effects, it is not reasonable to expect the assessment to include every ecological feature that may be affected, since effects are unlikely to be significant where features of low (Site level or below) value or sensitivity are, for example, subject to low or short-term impacts. On this basis, the assessment therefore focuses on ecological features that are considered by EDP, based on professional judgement, experience and contextual information, to be protected and/or of Local nature conservation value or above.

12.43 However, this does not mean that effects upon features of less than Local level nature conservation value have been discounted. Certain species and habitats that may not constitute IEFs based upon their nature conservation value, may still warrant consideration during the design of the development (and any mitigation identified) on the basis of their legal protection, their implications for policies and plans, or other issues, such as animal welfare. Indeed, the development still has a requirement to avoid significant harm to biodiversity and geological conservation interests, including through

mitigation and consideration of reasonable alternatives in accordance with the requirements of the National Networks National Policy Statement (NPS).

12.44 The guidelines also recommend that where ecosystem service provision (benefits people derive from the natural environment) might be affected as a result of a project's ecological effects, this should be recognised, and the relevant data collected during the EIA to inform separate specialist assessments of social and economic value. This can enable the social and economic implications of ecological changes to be taken into account.

12.45 The integrity of 'designated' sites is described as follows and is taken from the Guidelines for EIA in the UK (CIEEM, 2018). It has been used in this assessment to determine whether the impacts of the Proposed Development on a designated site are likely to be significant:

'Significant effects encompass impacts on structure and function of defined sites and ecosystems. The following need to be determined: For designated sites – is the project and associated activities likely to undermine the site's conservation objectives, or positively or negatively affect the conservation status of species or habitats for which the site is designated, or may it have positive or negative effects on the condition of the site or its interest/qualifying features.'

12.46 The conservation status of habitats and species within a defined geographical area is described as follows (CIEEM, 2018), and has been used in this chapter to determine whether the impacts of the Proposed Development on non-designated habitats and species are likely to be significant:

'*Habitats – conservation status is determined by the sum of the influences acting on the habitat that may affect its extent, structure and functions as well as its distribution and its typical species within a given geographical area;*

Species – conservation status is determined by the sum of influences acting on the species concerned that may affect its abundance and distribution within a given geographical area.'

12.47 On the basis of the above, and within this assessment, ecological effects are described as either:

- significant or not significant;
- direct and/or indirect,
- permanent or temporary; and
- negative or positive.

12.48 Where it was concluded that there would be an impact (positive or negative and including cumulative impacts) on a defined site or ecosystem(s) and/or the conservation status of habitats or species within a given geographical area, it was described in the following terms:

- beneficial, negligible or adverse type of impact; and
- minor, moderate or major scale of impact.

12.49 For the purposes of this assessment, effect at 'moderate' (or higher) level are considered to be significant in EIA terms. Ecology Table 12.7 'Assessment Summary' of this chapter provides a summary of those activities during the construction and operational phases of the Proposed Development impacting upon identified IEFs, including the significance, proposed mitigation, enhancement and, where necessary, compensation mechanism.

12.50 Mitigation measures have been incorporated into the assessment parameter plans and taken into account during the assessment of effects, such that the residual impact assessment reflects the completed scheme. These measures include those required to achieve the minimum standard of established practice plus additional measures to further reduce the effects of the scheme. The assessment takes into account the likely success of the mitigation.

12.51 The significance of the likely impacts upon IEFs has been assessed both before and after consideration of additional mitigation measures. The latter represents the assessment of the residual impacts of the Proposed Development.

12.52 In addition to determining the significance of an impact on any ecological features, this chapter also identifies any legal requirements in relation to wildlife.

Temporal scope

12.53 Likely impacts on ecological features have been assessed in the context of how the predicted baseline conditions within the ecological ZOI might change between the surveys and the start of construction. It is anticipated a phased work programme for the Proposed Development will commence in 2026, with works being complete by 2036.

Cumulative effects

12.54 Cumulative impacts that can be foreseen as a result of the Proposed Development in conjunction with these identified schemes, and any possible mitigation measures required, are considered at section 12.9.

Assumptions and limitations

12.55 The vast majority of surveys have been undertaken in suitable weather conditions at optimum times of year with reference to best practice guidance. Minor limitations specific to each of the field survey methodologies are detailed within the appropriate sections of Appendix 12.1, (document reference 6.2.12.1).

12.56 The initial environmental DNA (eDNA) surveys in 2018 of ponds for great crested newts (GCN) returned positive results in four ponds. These ponds were then surveyed using traditional methods and were found to contain no breeding GCN. The ponds were then tested for eDNA again in 2019 in order to confirm likely absence of GCN, and one pond

returned a second positive result; however, a survey in 2021 for all the ponds returned no positive eDNA. As a result of this, it is assumed that a potential small population of non-breeding GCN was present within the area, but has now declined to an undetectable population.

12.57 It should also be noted that owing to the seasonality of some species, as well as the ability for some species to quickly colonise sites, the absence of evidence of any particular species should not be taken as conclusive proof that the species is not present or that it will not be present in the future.

12.58 However, it is considered that the results of the Phase 1 survey and additional Phase 2 surveys undertaken in 2016, 2017, 2018, 2019 and 2021 are robust and reliable for the identification of the habitats and the presence or absence of legally protected species and other IEFs within the Main Order Limits.

RELEVANT LAW, POLICY AND GUIDANCE

12.59 The Conservation of Habitats and Species Regulations 2017 (as amended) enacts, within the UK, EU Council Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Fauna and Flora (as amended) and Directive 2009/147/EC on the Conservation of Wild Birds. Although these are European directives the legislation and legal protection offered to the habitats and species that it protects has been ratified into UK law. These Regulations provide for the designation and protection of statutory designated wildlife sites of European value ('European sites'), and the protection of a number of rare and vulnerable species in a European context ('European Protected Species' (EPS)). European sites, including SPAs, SACs and Ramsar Sites, are recommended for designation in the UK by the Joint Nature Conservation Committee (JNCC).

12.60 The Environment Act 2021 was passed into law in November 2021. Its overall aims are to strengthen environmental protection and deliver the UK Government's 25-year environment plan following the UK's exit from the European Union. Of greatest relevance to ecology and biodiversity are provisions within the Act for biodiversity gain to be a condition of planning permission in England. When these provisions come into force, following secondary legislation expected to be issued by the SoS in ~~November~~ January 2024~~2023~~, the delivery of a net gain in biodiversity of 10% (as measured by a standard biodiversity metric) will become a legal requirement of planning permission for most developments. However, a legal requirement of 10% net gain for NSIPs will likely come into effect in November 2025.

12.61 The Wildlife and Countryside Act 1981 (as amended, principally by the Countryside and Rights of Way Act 2000 and the Natural Environment and Rural Communities Act 2006) enshrines the protection of statutory designated wildlife sites of national importance (SSSIs) in England and Wales. The Act also sets out varying degrees of protection and offences with regard to native species and their habitats that are rare and vulnerable in a national context. The Act also provides for the control, management and offences in respect of invasive non-native species. Sites of national importance (SSSIs and NNRs) are

designated by NE under the Act and are protected from any development that may destroy or negatively affect them, either directly or indirectly.

12.62 Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006 places a statutory duty on LPAs to consider the effects upon biodiversity when exercising their functions in England and Wales. In addition, Section 41 of the NERC Act makes for the provision of a list of habitats and species of principal importance for the conservation of biodiversity.

12.63 The Animal Welfare Act 2006 further protects wild animals from unnecessary suffering when under the control of man and combines with the Wild Mammals (Protection) Act 1996, which protects wild mammals from intentional cruelty.

12.64 The Protection of Badgers Act 1992 (as amended) affords protection specifically to badger and their setts.

12.65 Finally, 'important' hedgerows, for which there are specific ecological criteria, are protected from removal (up-rooting or otherwise destroying) by the Hedgerow Regulations 1997 (under section 97 of the Environment Act 1995).

12.66 The following topic-specific policies are relevant to the assessment. These have been taken into account during the assessment since it is against these policies and legislative background that the Proposed Development will be judged to be acceptable on the grounds of biodiversity.

National planning policy

National Policy Statement for National Networks (2014)

12.67 The National Networks NPS provides guidance on how decisions will be made relating to development consent orders for Nationally Significant Infrastructure Projects (NSIPs). The NPS recognises that some developments will have some adverse local impacts on noise, emissions, landscape/visual amenity, biodiversity, cultural heritage and water resources. The significance of these effects and the effectiveness of mitigation is uncertain at the strategic and non-locationally specific level of this NPS. Therefore, whilst applicants should deliver developments in accordance with government policy and in an environmentally sensitive way, including considering opportunities to deliver environmental benefits, some adverse local effects of development might remain.

12.68 Pages 51-55 of the NPS concerns biodiversity and ecological conservation. Paragraphs 5.25 to 5.26 of the NPS state:

'As a general principle, and subject to the specific policies below, development should avoid significant harm to biodiversity and geological conservation interests, including through mitigation and consideration of reasonable alternatives. The applicant may also wish to make use of biodiversity offsetting in devising compensation proposals to counteract any impacts on biodiversity which cannot be avoided or mitigated. Where significant harm cannot be avoided or mitigated, as a last resort, appropriate compensation measures

should be sought.

In taking decisions, the Secretary of State should ensure that appropriate weight is attached to designated sites of international, national and local importance, protected species, habitats and other species of principal importance for the conservation of biodiversity, and to biodiversity and geological interests within the wider environment.'

National Planning Policy Framework (2021)

12.69 At the heart of the National Planning Policy Framework (NPPF) is a presumption in favour of sustainable development, this being the golden thread running throughout the document.

12.70 Chapter 15 of the NPPF 'Conserving and enhancing the natural environment' sets out the requirement to consider biodiversity in planning decisions.

12.71 The paragraphs within Chapter 15 relevant to the Proposed Development are summarised below:

'174. Planning policies and decisions should 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;

(c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate;

(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;

(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; and

(f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.

179. To protect and enhance biodiversity and geodiversity, plans should:

(a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity61; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation62; and

(b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.

180. When determining planning applications, local planning authorities should apply the following principles:

(a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;

(b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;

(c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and

(d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.'

12.72 In addition to the requirements of the NPPF, NE, as the statutory nature conservation organisation for England, provides specific 'Standing Advice' regarding various protected species as 'material considerations' (NE 2016)[1]. This advice contains details on likely significant impacts and recommended survey effort to support planning applications.

Local planning policy

12.73 The DCO Site falls across four LPA areas, namely: Blaby District, and Hinckley and Bosworth Borough, Harborough District and Rugby Borough Councils. The relevant adopted local statutory planning documents include:

[1] Available at: https://www.gov.uk/guidance/protected-species-how-to-review-planning-applications

- Blaby District Local Plan (Core Strategy) (adopted 2013);
- Blaby District Local Plan (Delivery) Development Plan Document (DPD) (adopted 2019);
- Hinckley and Bosworth Borough Core Strategy (adopted 2009);
- Hinckley and Bosworth Borough Site Allocations and Development Management Policies (adopted 2016);
- Harborough Local Plan (adopted 2019); and
- Rugby Borough Council Local Plan (adopted 2019).

12.74 A review of the local planning policy, including relevant supplementary planning documents, evidence base documents and associated guidelines relevant to this assessment, is contained below.

Blaby District Core Strategy (adopted February 2013)

12.75 Policies of relevance to ecology and biodiversity contained within the Blaby District Local Plan Core Strategy consist of the following:

- Policy CS19 – Bio-diversity and geo-diversity, which aims to protect the districts natural environment and increase its biodiversity through appropriate design of forthcoming proposals.

Blaby District Local Plan (Delivery) Development Plan Document (adopted 2019)

12.76 The Blaby District Local Plan contains the development management policies that apply across the District, there are no specific Development Management (DM) policies that relate solely to ecology or biodiversity, however, see the following of relevance to ecology:

'DM2 Development in the Countryside

(*vi) To protect the important areas of the District's natural environment (species and habitats), landscape and geology and to improve bio-diversity, wildlife habitats and corridors through the design of new developments and the management of existing areas by working with partners.'*

12.77 The HBBC administrative area bounds the western most extent of the Main Order Limits and makes up a proportion of the proposals potential ecological ZOI (where potential impacts may occur).

12.78 The statutory development plan for HBBC comprises 'The Local Plan 2006 – 2026' which is made up of a series of documents. Those of relevance include:

- Core Strategy (adopted 2009); and
- Site Allocations and Development Management Policies (adopted 2016).

Hinckley and Bosworth Core Strategy (adopted 2009)

12.79 Spatial Objective 10 of the HBBC Core Strategy DPD is of relevance to Ecology and Biodiversity:

*'**Spatial Objective 10: Natural Environment and Cultural Assets –** To deliver a linked network of green infrastructure, enhancing and protecting the borough's distinctive landscapes, woodlands, geology, archaeological heritage and biodiversity and encourage its understanding, appreciation, maintenance and development.'*

12.80 Core Policy 20 'Green Infrastructure' also contains a section that is relevant to the proposals:

*'….. **Burbage Common and Woods** – Increase the size of the site to increase both the community value and biodiversity holding capacity and improve access to the site, particularly for pedestrians and cyclists.'*

Hinckley and Bosworth Site Allocations and Development Management Policies (adopted 2016)

12.81 Policies within the Site Allocations and Development Management Policies DPD of relevance include the following:

- Policy DM6 – Enhancement of Biodiversity and Geological Interest; and
- Policy DM9 – Safeguarding Natural and Semi-Natural Open Spaces.

Harborough Local Plan (adopted 2019);

12.82 Relevant policies within the Harborough Local Plan include the following:

- Policy GI1 – Green infrastructure networks; and
- Policy GI5 – Biodiversity and geodiversity.

Rugby Borough Council Local Plan (adopted 2019)

12.83 Relevant policies within the Rugby Borough Council Local Plan include the following:

- Policy NE1: Protecting Designated Biodiversity and Geodiversity Assets;
- Policy NE2: Strategic Green and Blue Infrastructure;
- Policy NE3: Landscape Protection and Enhancement; and
- Policy SDC2: Landscaping.

Neighbourhood plans

Fosse Villages Neighbourhood Plan (adopted 2021)

12.84 The southern and eastern extents of DCO limits fall within the Fosse Villages Neighbourhood Plan area. The Neighbourhood Plan also identifies the presence of three ecologically important SSSIs within the Plan area, all of which are within 5km of the Main Order Limits, namely: Burbage Wood and Aston Firs; Croft Hill; and Croft Pasture SSSI. Potential effects on these SSSIs are considered in the assessment.

12.85 The relevant policy within the Neighbourhood Plan is Policy FV4: Biodiversity, which states:

'New development which minimises impacts on and provides net gains for biodiversity and enhances resilience to current ecological pressures on habitats at Fosse Meadows Nature Park will be supported.

New development will be expected to maintain and enhance existing ecological corridors and landscape features (such as watercourses, hedgerows and tree-lines) to support biodiversity.'

BASELINE CONDITIONS

12.86 A general description of the Main Order Limits and surroundings is provided in Chapter 2: Site description (document Reference 6.1.2) and shown on Figure 2.1 (document reference 6.3.2.1)

12.87 This section summarises the baseline ecological conditions determined through the course of desk-based and field-based investigations described above. This includes ecological features/receptors that lie within the potential ecological ZOI of the DCO limits .

12.88 Full results of the surveys undertaken are provided within Appendix 12.1, (document reference 6.2.12.1), and on Figures 12.1 to 12.23 (document Reference 6.3.12.1 to 6.3.12.23).

Description of study area

12.89 The Main Order Limits is centred approximately at Ordnance Survey Grid Reference (OSGR) SP 46314 94858 and is located on the eastern edge of Hinckley. The Main Order Limits encompass mainly agricultural fields of both pasture and arable cultivation, which are bounded to the north-west by the Leicester to Hinckley railway and the proposed A47 Link Road defining the south-eastern boundary. The south-western boundary of the Main Order Limits are defined by field boundaries, beyond which are blocks of deciduous woodland, including Burbage Wood and Aston Firs SSSI and Freeholt Wood potential Local Wildlife Sites (pLWS). The north-eastern boundary is also bounded by field boundaries beyond which lies the village of Elmesthorpe, a linear settlement on the B581 (Station Road). An unnamed stream flows north-eastward through the southern portion of the

Main Order Limits. A number of LWSs and pLWSs exist within and directly adjacent to the Main Order Limits.

Designated sites

Statutory designations

12.90 No part of the Main Order Limits is covered by any internationally important statutory designations and there is a single internationally designated site, Ensor's Pool SAC, located within a 15km radius of the DCO Site. The River Mease SAC is located 18.1km from the DCO Site at its closest point, although its catchment area is located within the 15km ZOI and therefore has been considered. Therefore these designations are specifically dealt with at Appendix 12.3 Shadow Habitats Regulation Assessment (sHRA) (document reference 6.2.12.3).

12.91 The Main Order Limits is not covered by any nationally or locally important statutory designations. There are five such designations within 5km of the Main Order Limits, namely four SSSIs and a single LNR (which overlaps and forms part of a SSSI). Burbage Wood and Aston Firs SSSI and the overlapping Burbage Common and Woods LNR are located immediately adjacent to the Main Order Limits. The SSSI and LNR have therefore been scoped into the EIA as an IEF of National value.

12.92 As detailed further in Appendix 12.1, (document reference 6.2.12.1), the other statutory designated sites within 5km are not considered to be at risk of significant direct adverse impacts as a result of the Proposed Development.

12.93 The Air Quality Chapter (Chapter 9) (document reference 6.1.9) has looked at a number of statutory designated sites that are located at a greater distance from the Proposed Development given that these effects may result from increased traffic volumes. There are possible indirect adverse impacts on statutory designated sites in the form of habitat degradation as a result of nutrient deposition. The results of the air quality study (Chapter 9) (document reference 6.1.9) show that although some of the SSSI's will have deposition greater than the critical load during the operational phase, the impacts from the Proposed Development do not give rise to significant rises in deposition (greater than 1% of current load levels experienced) and can therefore be ruled out as a significant impact. Although there is an increase in nitrogen deposition of 1.1% of the lower critical load level at Burbage Wood LNR it is not an increase of over 1% of the levels currently experienced and there is a betterment over time than the current levels and therefore would not be considered significant in EIA terms. Therefore, due to their reasons for designation, degree of spatial separation and lack of ecological connectivity between them and the Main Order Limits, and/or level of current recreational use or nutrient deposition, these sites have been scoped out of the EIA as IEFs and are not considered further in this assessment.

12.94 As above, an sHRA has been undertaken to assess any likely significant effects which may arise from the Proposed Development on internationally designated sites of importance (included at Appendix 12.3 document reference 6.2.12.3).

12.95 For clarity, the sHRA has found that the Development Proposals will not give rise to likely significant effects on any internationally designated sites, either alone or in-combination with other plans or proposals.

Non-statutory designations

12.96 Within 3km of the central grid reference of the Main Order Limits are 13 LWSs (see Figure 12.2) (document reference 6.3.12.2), of which two lie within the Main Order Limits (Field Rose Hedgerow and Elmesthorpe Plantation Hedgerow, one lies immediately adjacent to the western boundary of the Main Order Limits (Burbage Common and Woods, which is also part of the LNR and SSSI), and one lies immediately adjacent to the southern boundary (The Borrow Pit Grassland). Additionally, two LWSs (Billington Rough and Hay Meadow) lie 100m and 250m to the north of the railway respectively.

12.97 Also, within 3km of the Main Order Limits are 13 cLWS, and 60 pLWS, of which seven are within the Main Order Limits (Freeholt Meadow, Woodland adjancent to Aston Firs, Burbage Common Road Hedgerows, Burbage Common Road Railway Bridge, Junction 2 Grassland, B4669 Road Verge and Elmsthorpe Boundary Hedgerows). Burbage Wood and Aston Firs SSSI and Freeholt Wood pLWS are also listed as Ancient Semi-Natural Woodland (ASNW).

12.98 Of these designations, an assessment has been made of those designations likely to be affected by the Proposed Development. All LWSs and pLWSs within and directly adjacent to the Main Order Limits and the A47 Link Road corridor are sufficiently near or connected via receptor pathways to require consideration in relation to the Proposed Development (see Figure 12.2) (document reference 6.3.12.2). Grassland sites within 250m of the Main Order Limits have also been considered. These non-statutory designations are described further in Table 12.5 below.

Table 12.5: Relevant non-statutory designations.

Site name (and reference)	Designation	Distance from Main Order Limits	Reasons for designation
Burbage Common and Woods	LWS	Immediately adjacent to western boundary.	Transitional mesotrophic/acid grassland, ASNW, significant bird and amphibian assemblages and Red Data Book species, with scrub and ponds. Community value.

Site name (and reference)	Designation	Distance from Main Order Limits	Reasons for designation
Field Rose Hedgerow	LWS	Within.	Species-rich hedgerow.
Elmesthorpe Plantation Hedgerow	LWS	Within.	Species-rich hedgerow.
The Borrow Pit	LWS	Immediately adjacent to southern boundary.	Mesotrophic grassland.
Billington Rough	LWS	Immediately adjacent to north-eastern boundary.	Wet grassland with pond.
Hay Meadow	LWS	250m to north of railway in north-east.	Mesotrophic grassland.
Freeholt Woods	pLWS	Immediately adjacent to southern boundary.	Broad-leaved woodland.
Freeholt Meadow	pLWS	Within.	Mesotrophic grassland.
Woodland Adjacent to Aston Firs	pLWS	Within.	Broad-leaved woodland.

Site name (and reference)	Designation	Distance from Main Order Limits	Reasons for designation
Castlewood Grassland	pLWS	Immediately adjacent to south-western boundary.	Mesotrophic grassland.
Stanton Road Verge 2	pLWS	Immediately adjacent in north-east.	Mesotrophic grassland.
Home Farm Grassland	pLWS	Immediately adjacent in north-east.	Mesotrophic grassland.
Trackside Meadow	cLWS	Immediately north of railway in north-east.	Mesotrophic grassland.
Burbage Common Road Hedgerows	pLWS	Within.	Species-rich hedgerow with trees.
Burbage Common Road Railway Bridge	pLWS	Within.	Brick railway bridge with ferns.
Junction 2 Grassland	pLWS	Within.	Mesotrophic grassland.
B4669 Road Verge	pLWS	Within.	Mesotrophic grassland.
Elmesthorpe Boundary Hedgerows	pLWS	Within.	Species-rich hedgerow.

12.99 Burbage Common Road railway bridge has been surveyed to assess whether it would meet the criteria for an LWS. The bridge structure did not meet these criteria and therefore was not regarded as having LWS status.

12.100 The remainder of the non-statutory designations within 3km of the Main Order Limits, which are not listed in Table 12.5, are not considered to be at risk of significant adverse impacts as a result of the Proposed Development. This is due to their degree of separation and lack of connectivity with the Main Order Limits coupled with their reasons for designation, as described further in Appendix 12.1, (document reference 6.2.12.1). They have therefore been scoped out of the EIA as IEFs.

Habitats

12.101 A full description of the habitats present within the Main Order Limits is provided in Annex 1 of Appendix 12.1, (document reference 6.2.12.1), and the distribution of these habitats is shown on Figure 12.3 (document reference 6.3.12.3). In summary, the main habitats found and described within the Main Order Limits (and their approximate extents) are as follows:

- arable land (130.08 hectares (ha);
- improved and amenity grassland (61.14ha);
- species-poor semi-improved grassland (13.74ha);
- buildings/hardstanding/bare ground (9.68ha);
- broadleaved plantation woodland (0.75ha);
- scrub and tall ruderal (1.35ha);
- broadleaved semi-natural woodland (0.58ha);
- semi-improved neutral grassland (~~1.16~~0.33ha);
- waterbodies (0.25ha);
- marshy grassland (~~0.33ha~~0.31ha);
- ~~dry ditches~~wet ditches (~~1,232m~~ 1020m);
- dry ditches (2,819m)
- ~~wet ditches and stream~~stream (~~1,991m~~ 1,676m);
- species-rich hedgerows (13,270m); and

- species-poor hedgerows (5,610m).

12.102 The Main Order Limits principally comprise arable, improved, semi-improved grassland, buildings and hardstanding, marshy grassland and tall ruderal vegetation of negligible and Site level ecological importance only, owing to their limited distinctiveness, structural and botanical diversity, and intensive management.

12.103 The semi-improved neutral grassland, pond network, plantation woodland and ditches are considered to be IEFs of Local nature conservation value, owing to their positioning, relative lack of species-diversity and extent.

12.104 The hedgerow/tree line network demarcating the field boundaries, the scattered mature trees across the Main Order Limits, and the parcels of broadleaved semi-natural woodland are considered to be IEFs of District nature conservation value owing again to their positioning, species-diversity and extent. A large number of hedgerows within the Main Order Limits were assessed as having potential to qualify as 'Important' under the Hedgerow Regulations 1997 (see Table A1.1 of the Baseline Report (Appendix 12.1, document reference 6.2.12.1)). As a highly precautionary approach, all such hedgerows have been classified as Important for the purposes of this assessment.

12.105 Despite its shading and lack of aquatic vegetation, the stream is also considered to be of District nature conservation value, due to its connectivity with the wider landscape, including Aston Firs woodland (part of the SSSI), in the west.

12.106 The valued habitats noted above, together with other habitats of little or negligible intrinsic value, have also been found in some instances to support protected or notable species. This is discussed further within the relevant species sub-sections of this chapter below.

Species

12.107 As set out previously, information on protected and/or notable species within or near to the Main Order Limits and DCO limits was collected through a desk study and a range of field surveys. The findings of these investigations are set out in full in Appendix 12.1 (document reference 6.2.12.1) and briefly summarised below.

Birds

12.108 The winter bird survey recorded a number of species of conservation concern utilising the Main Order Limits, including some small, loose flocks of skylark (*Alauda arvensis*), groups of redwing (*Turdus iliacus*) and fieldfare (*Turdus pilaris*), and small groups of meadow pipit (*Anthus pratensis*), linnet (*Linaria cannabina*) and yellowhammer (*Emberiza citrinella*).

12.109 Species of birds recorded during the breeding bird surveys across the Main Order Limits were predominantly resident passerines, including a number of 'farmland indicator' species (as identified by the RSPB) and a proportion of summer migrants. A number of species of conservation concern were recorded as breeding or possibly breeding within the Main Order Limits, notably skylark, which were confirmed breeding in reasonable

numbers. Furthermore, barn owl (*Tyto alba*) a Schedule 1 species, was recorded within the Main Order Limits but no evidence of breeding was recorded.

12.110 Overall, the diversity and density of wintering and breeding birds recorded within the Main Order Limits is considered to be mostly typical for a lowland urban edge farmland site in central England. Diversity and abundance are slightly higher than is generally found, although given the size of the Main Order Limits, this is not surprising. Farmland indicators were recorded in moderate numbers, including yellowhammer, linnet, grey partridge (*Perdix perdix*), lapwing (*Vanellus vanellus*) and yellow wagtail (*Motacilla flava*). The bird assemblage supported by the Main Order Limits is therefore considered to be of importance at the District level.

Bats

12.111 The data search returned a negative result for any records of Annex II bat species within 6km of the Main Order Limits. A number of bat records were however returned from within a 3km radius, namely pipistrelle species *Pipistrellus* sp., brown long-eared (*Plecotus auritus)* and noctule (*Nyctalus noctule)*. None of the records were located within the Main Order Limits, however a number of unspecified bat roosts were recorded within 1km of the Main Order Limits, particularly to the south.

12.112 The Main Order Limits contains 33 buildings/built structures (see Figure 12.12, document reference 6.3.12.12), all of which were assessed for their potential to support roosting bats. ~~Five~~ Four of these buildings ([redacted]) were found to support bat roosts in 2021. [redacted] ~~–~~were found to support only single common pipistrelle bats in 2021 and no roosts had been recorded in these buildings previously. [redacted] was found to support a roost of two common pipistrelle bats in 2021 and supported three bats of this species during the previous surveys. Building [redacted] was found to support eight common pipistrelle bats in 2021 and in previous surveys was found to support three common pipistrelle and six long-eared bats.

12.113 A total of 83 trees were found to have bat roost potential (8 with high, 22 with moderate and 53 with low potential) within the Main Order Limits (see Figure 12.13) (document reference 6.3.12.13). No trees were confirmed as roosts during the ground level visual assessment or subsequent general activity surveys.

12.114 The activity surveys across the Main Order Limits recorded low to moderate levels of commuting and foraging bat activity, mainly associated with the species-rich hedgerows, woodland edge, waterbodies and mature trees. This activity was fairly evenly spread across the Main Order Limits, and species diversity is fairly low, being dominated by common pipistrelles (86.3% of all static detector recordings made) with at least eight other species recorded (*Myotis* sp. not identified to species level) during the transect and automated detector surveys, including a few passes from two rarer species locally and nationally - Nathusius' pipistrelle (*Pipistrellus nathusii*) (six recordings spread between April to September) and barbastelle (*Barbastella barbastellus*) (two recordings).

12.115 The bat assemblage recorded within the Main Order Limits is typical of an urban edge farmland site in central England, with common and widespread generalist species accounting for the vast majority of foraging and commuting activity, and a small amount of activity from several rarer species, as shown on Figures 12.14 – 12.20 (document reference 6.3.12.14 – 6.3.12.20). Based on the bat activity findings summarised above, the confirmed and potential roosting in buildings, and the potential roosting in trees within/near to the Main Order Limits, the bat assemblage present is considered to be of importance at the Local level.

Otter

12.116 A single record for otter (*Lutra lutra*) from 2002 from 400m to the north-east of the Main Order Limits, nearby to the stream which runs through the Main Order Limits was returned from Leicestershire and Rutland Environmental Records Centre (LRERC) during the desk study. During the two detailed walkover surveys in 2018, an old otter spraint was found immediately adjacent to the Main Order Limits, along the wet ditch on the north-western corner of the Main Order Limits. The update surveys in 2021 found no evidence of the species.

12.117 The evidence found is not considered to be indicative of a permanent population on-site and is more likely to indicate the overspill of populations from the adjacent Burbage Common and Woods LNR. The population is therefore judged to be of importance at the 'Site level' only.

Badger

12.118 A reasonably large number of recent records of badger (*Meles meles*) were returned by the desk study. The majority of these were for setts along the railway line and the M69 embankment.

12.119 During the detailed walkover surveys in 2018, 2019 and 2021, a number of badger setts were discovered across the Main Order Limits and immediate surroundings, comprising one main sett, just off-site to the west, one subsidiary sett, and an outlier sett within the Main Order Limits. Evidence of foraging and dispersal across the Main Order Limits was also found.

12.120 The survey confirms the presence of badgers and active setts within the Main Order Limits; and suggests that the Main Order Limits forms a core part of the territory of at least one badger clan. As badgers are relatively common and widespread nationally and within Leicestershire, the presence of the setts on a site of this size is not unexpected. The badger population present is consistent with populations across the midlands and is therefore considered to be of Site value. The badger population is considered to be an IEF owing to their legally protected status.

Water Vole

12.121 Seven records of water vole (*Arvicola amphibius*) were returned, dated between 1998 and 2003, from around the Burbage Common area.

12.122 During the two detailed surveys for water vole in 2018, no water voles or confirmed evidence of this species was found, apart from a single instance of possible feeding remains, found on the wet ditch on the north-western edge of the Main Order Limits. The 2021 surveys found no evidence of use by the species. Therefore, water voles are not considered to be an IEF and are not discussed further within this assessment.

Brown Hare

12.123 No records of hare were returned in the desk study by LRERC. However, they were recorded commonly across arable land within the Main Order Limits, including a juvenile on one occasion. This species has therefore been valued as important at a Local level.

Great Crested Newt and Other Amphibians

12.124 GCN (*Triturus cristatus*), common frog (*Rana temporaria*), smooth newt (*Lissotriton vulgaris*) and common toad (*Bufo bufo*) records from as recently as 2012 were all returned as part of the desk study. The majority of GCN records were from Hinckley Golf Course to the north-west, Sapcote to the south-east and around the Earl Shilton bypass, which is situated to the north-east of the Main Order Limits.

12.125 In 2018, the eDNA survey returned a positive result for the presence of GCN eDNA in ponds [redacted] (onsite) and [redacted] (off-site) but was negative for all other surveyed ponds within the Main Order Limits. Access was not granted to the majority of off-site ponds. No GCN (or eggs or larvae) were recorded during the course of the six conventional pond surveys undertaken of [redacted] in 2018. A second eDNA test was carried out on these four ponds following this result, resulting in a positive result for just one pond, [redacted] In 2019, only [redacted] (off-site) returned a positive eDNA result and in 2021 all sampled ponds tested negative.

12.126 As a result of this, it is assumed that a potential small population of non-breeding GCN was present within the area, but has now declined to an undetectable population. On a precautionary basis, it is recommended that further survey work is are undertaken prior to the detailed design stage to ascertain if the population has recovered but otherwise GCN are not considered an IEF for this Site.

12.127 Other amphibian species recorded during the 2018 surveys include toads, frogs and smooth newts. Toads are listed as a Species of Principal Importance under Section 41 of the NERC Act (2006) in England, and due to the numbers recorded, they have been valued at a Local level.

12.128 Common frog and smooth newts were recorded at relatively low densities, consequently being valued at a Site level, and are therefore not considered to warrant inclusion as IEFs in their own right. It is considered that the provision of new pond habitat, in addition to other measures aimed primarily at toads will act as a surrogate for safeguarding the interests of these species more generally.

Reptiles

12.129 The desk study returned records of grass snake (*Natrix helvetica*) on the edge of Burbage and in arable field margins to the north of the Main Order Limits. A record of adder (*Vipera berus*) was also returned from Hinckley Golf Club in 2005.

12.130 A 'low' population of grass snake (with a peak count of four adults) and slow worm (*Anguis fragilis*) (with a single individual recorded) was found during the refugia-based reptile survey undertaken across the Main Order Limits during 2018, 2019 and 2021 seasons. Due to the common and widespread distribution of these species and relatively small numbers recorded, the grass snake and slow worm population has been valued at Site level and is therefore not considered to warrant inclusion as an IEF in their own right. Although not considered an IEF, further consideration has been given to sensitive working methodologies during the construction phase accordingly.

Invertebrates

12.131 Several records of notable moths and butterflies were returned by LRERC from the search radius.

12.132 The majority of the Main Order Limits is not considered to support important populations of invertebrates, given the dominance of arable and improved/semi-improved grassland habitats. However, habitats including the hedgerow network, scattered mature trees, woodland, waterbodies and watercourse provide opportunities for terrestrial and aquatic invertebrates, at a Site level. Invertebrates are therefore not considered to warrant inclusion as an IEF in their own right and the assessment of effects and mitigation relating to these habitats, including the creation of new species-rich habitat, will act as a surrogate to safeguard such interests.

Summary of important ecological features

12.133 Based on the baseline ecological information described above (and presented in full in Appendix 12.1, (document reference 6.2.12.1)), a number of IEFs have been identified and are summarised in Table 12.6. Informed by the baseline investigations and consultations described above, the IEFs taken forward for detailed assessment comprise those assessed to be of Local level nature conservation value or above.

Table 12.6: Summary of Important Ecological Features (IEFs).

Important Ecological Feature	**Key attributes**	**Nature conservation importance**
Statutory Designated Sites		
Burbage Woods and Aston Firs SSSI	Ash-Oak-Maple woodland adjacent to the west of the Main Order Limits.	National
Burbage Common and Woods LNR	Semi-natural woodland and mesotrophic grassland, overlapping with the SSSI.	County/National
Non-statutory Designated Sites		
Burbage Common and Woods LWS	Semi-natural woodland and mesotrophic grassland, overlapping with the SSSI.	County/National
Field Rose Hedgerow LWS	Species-rich hedgerow with 15 woody species.	County
Elmesthorpe Plantation Hedgerow LWS	Species-rich hedgerow with 8 species.	County
The Borrow Pit LWS	Mesotrophic grassland.	County
Billington Rough LWS	Wet grassland with pond.	County
Hay Meadow LWS	Mesotrophic grassland.	County
Freeholt Meadow pLWS	Species-poor, semi-improved grassland.	Local
Woodland adj. to Aston Firs pLWS	On-site broad-leaved woodland with moderate structural and botanical diversity.	District

Important Ecological Feature	**Key attributes**	**Nature conservation importance**
Castlewood Grassland pLWS	Mesotrophic grassland (not surveyed).	District
Burbage Common Road Hedgerows pLWS	Species-rich hedgerow with 7 woody species.	District
Junction 2 Grassland pLWS	Semi-improved neutral grassland surrounded by woodland.	District
B4669 Road Verge pLWS	Mesotrophic grassland (not surveyed).	District
Elmesthorpe Boundary Hedgerows pLWS	Species-rich hedgerow with 9 woody species.	District
Stanton Road Verge 2 pLWS	Mesotrophic grassland.	District
Home Farm Grassland pLWS	Mesotrophic grassland.	District
Trackside Meadow cLWS	Mesotrophic grassland.	District
Habitats		
Semi-improved Neutral Grassland	Grassland with poor to moderate species-diversity, value limited by extent and isolation.	Local
Hedgerow and Tree Network (not including pLWS or LWS)	Network of predominantly species-rich hedgerows and mature tress associated with the field boundaries that form Local dispersal corridors for wildlife.	District

Important Ecological Feature	**Key attributes**	**Nature conservation importance**
Woodland (not including Woodland adj. to Aston Firs pLWS)	Small areas of plantation and semi-natural broadleaved woodland.	Local
Ponds	Network of permanent water bodies supporting a few aquatic species and forming part of the local ecological network.	Local
Stream	Stream supporting very few aquatic species but forming a wildlife corridor through landscape.	District
Ditches	Mostly dry, but a small number of wet ditches present supporting aquatic flora.	Local
Fauna		
Winter Birds	Assemblage including reasonable flocks of farmland specialists, with a range of other species of conservation concern in smaller numbers. Value limited by management regime and levels of disturbance.	Local to District
Breeding Birds	Breeding assemblage including reasonable numbers of farmland specialists, including a population of up to 42 pairs of skylark and other ground nesting species.	District

Important Ecological Feature	Key attributes	Nature conservation importance
Bats	Common and widespread assemblage of foraging/commuting/roosting bats primarily associated with higher value boundary hedgerow and tree habitats.	Local
Badger	An active subsidiary sett within hedgerow in west of Main Order Limits, main sett just off-site to the west, outlier setts towards south-east of Main Order Limits and in the south-west of the Order Limits The habitats present within the Main Order Limits provide opportunities for foraging and commuting badgers.	Site
Otter	One old spraint on wet ditch in north-western corner of the Main Order Limits in 2018 not recorded again since.	Site
European hare	Hare present over most arable land within the Main Order Limits.	Local
Reptiles	Records of grass snake in local area, low population of grass snake and slow worm recorded within the Main Order Limits.	Site
Common toad	Records of amphibians present nearby, including common toad. Medium population recorded during reptile and GCN surveys.	Local

12.134 In accordance with the assessment methodology described earlier, all other habitats and species/species groups are deemed to be of only Site level' nature conservation importance or less, and will not be taken forward for detailed assessment, since effects

upon such features are unlikely to be 'significant' in EIA terms. The only exception is badger, whereby although the population present is regarded as only important at the Site level, this species is regarded as an IEF by virtue of its legal protection (individuals and their setts are protected at all times).

Future baseline

12.135 It is anticipated that in the absence of development, the Main Order Limits would continue to be managed as arable and pastoral farmland. Depending on the farming regime, the quality of habitats and opportunities for different species may vary slightly over time, particularly farmland birds. Such variations are unlikely to be significant and would be considered as standard fluctuations in a dynamic farming environment. It is near-certain that the existing baseline described above would therefore not appreciably change.

POTENTIAL SIGNIFICANT ENVIRONMENTAL EFFECTS OF THE PROPOSALS

12.136 The key embedded mitigation measures included within the parameter plans (see ES Chapter 2) (document reference 6.1.2) pertinent to the ecological impact assessment include:

- substantial buffer of a minimum of 25m, but with a majority exceeding 50m, between built development and Burbage Wood and Aston Firs SSSI and Freeholt Wood pLWS/ASNW off-site woodland;
- retention of on-site Broadland semi-natural woodland and buffer from the built development, including Woodland adjacent to Aston Firs pLWS;
- retention and provision of buffers to hedgerows around the western, southern and eastern boundaries of the Main Order Limits, including Field Rose Hedgerow and Elmesthorpe Plantation Hedgerow LWS, and Elmesthorpe Boundary Hedgerow pLWS;
- provision of a large wildlife area (approximately 11.34ha) in the west of the Main Order Limits, comprising open meadow grassland, shrub and tree planting and wetland/SuDS features;
- provision of habitat (11.33ha) to the south of the A47 Link Road proposals to complement and buffer the Burbage Common habitats; and
- provision of new structural and hedgerow planting in addition to connected aquatic/SuDS features.

12.137 An assessment of likely significant effects of the Proposed Development on the ecological features identified above has been undertaken based on the parameter plans, which incorporate a level of 'inherent' mitigation, as described above, included as a result of an iterative assessment and design process. An evaluation of IEFs has been made with reference to CIEEM's Ecological Impact Assessment Guidelines (CIEEM, 2019).

12.138 The guidelines advocate an approach to valuing features that involves professional judgement based on available guidance and information, together with advice from experts, who know the locality of the project and/or the distribution and status of the species or features that are being considered.

12.139 The likely effects are assessed with the inherent mitigation included, but in the absence of any additional mitigation measures required to ameliorate likely significant effects.

12.140 The Proposed Development comprises two main stages; namely the construction phase, comprising all site preparation works and construction of all buildings, associated infrastructure and landscaping; and the operational phase comprising the long-term occupation.

Construction impacts and effects

12.141 Whilst exact details of the construction methods to be used cannot be determined with absolute certainty at this time, the details of the parameters have been fixed for the purposes of this assessment and are described within ES Chapter 3 (document reference 6.1.3). These include:

- the demolition of the existing buildings within the Main Order Limits;
- the demolition of the existing railway bridge over the Leicester to Hinckley railway on Burbage Common Road;
- the remodelling of the natural terrain inside the HNRFI site to provide level plateaux for development;
- the construction of the railport, B8 buildings, energy centre, site hub, lorry park and associated facilities;
- the highways and railway work;
- the noise attenuation, drainage works, utilities and landscape and habitat creation works; and
- connection to the rail network.

12.142 Likely impacts identified which could arise as a result of the construction of the development in absence of mitigation include the following:

- impacts of direct habitat loss and fragmentation/severance due to land take upon habitats and species;
- indirect impacts to habitats and species due to habitat degradation and damage;
- impacts of noise, light and human disturbance to species; and

- pollution of groundwater and surface water flows, as further identified and evaluated in ES Chapter 14 (document reference 6.1.14). and 15 (document reference 6.1.15).

12.143 The Air Quality Chapter (document reference 6.1.9) has shown that the construction traffic impact on air quality would not give rise to an increase in the nitrogen deposition within the ecological receptors within the study area. This is shown at Table 9.22 within the chapter.

Designated sites

Statutory designations

12.144 Owing to the development buffer afforded to Burbage Wood and Aston Firs SSSI (i.e. 25m construction buffer)~~of approx. 25m at its closest point to built development, with remaining buffer typically 50m~~ and the woodland habitat, for which it has been designated, no direct impacts are anticipated during construction of the Proposed Development.

12.145 However, there remains a low risk that the SSSI may be subject to indirect degradation impacts; such as soil compaction and encroachment by machinery or pollution events resulting from adjacent construction works and material storage. Such temporary negative effects are considered to be significant at a Site to Local level owing to the low risk and limited extent and magnitude of such likely impacts, rather than the National level that the SSSI holds.

12.146 As concluded within the sHRA at Appendix 12.3 (document reference 6.2.12.3), no likely significant effects on the European designated sites Ensor's Pool SAC and River Mease SAC as a result of the Proposed Development have been identified.

Non-statutory designations

12.147 With respect to non-statutory designations, Elmesthorpe Plantation Hedgerow LWS, Field Rose Hedgerow LWS, Woodland adjacent to Aston Firs pLWS, Junction 2 Grassland pLWS, B4669 Road Verge pLWS and Elmesthorpe Boundary Hedgerow pLWS are being retained and afforded a development buffer; and the Borrow Pit LWS, Billington Rough LWS, Hay Meadow LWS, Castlewood Grassland pLWS, Home Farm Grassland pLWS, Trackside Meadow cLWS and Stanton Road Verge 2 pLWS are all off-site, such that no direct impacts on any of these designations are anticipated during construction of the Proposed Development.

12.148 However, there remains a low risk that these designations may be subject to indirect degradation impacts, such as soil compaction and encroachment by machinery or pollution events resulting from adjacent construction works and material storage. Such temporary negative effects are considered to be significant at a Site to Local level owing to the low risk and limited extent and magnitude of such likely impacts, rather than the District level that they hold.

12.149 Burbage Common Road Railway Bridge pLWS will be lost to the Proposed Development and further surveys have shown that the pLWS would be unlikely to qualify as a full LWS.

12.150 Although Burbage Common Road Hedgerows pLWS will be lost in part to the proposals the hedgerow is considered to be of no greater importance than the other hedgerows within the Main Order Limits and therefore is not considered as an LWS and impacts are discussed in relation to hedgerow impacts instead.

12.151 Freeholt Meadow pLWS will also be permanently lost to facilitate the provision of a new access road from Junction 2 of the M69. The habitat is degraded and can no longer be considered to be of above Local level value, and the permanent loss of the pLWS is therefore considered to also be significant at a Local level.

Habitats

Hedgerow and mature tree network

12.152 The proposed and unavoidable loss of approximately 258 scattered mature and early mature trees would be necessary to facilitate the Proposed Development. The direct loss of these trees is considered to be of high magnitude and extent. In the absence of further mitigation, such permanent impacts are therefore certain to constitute a significant negative effect at a District level.

12.153 In addition, during the construction phase retained mature trees may be subject to indirect degradation impacts, such as soil compaction and encroachment by machinery resulting from adjacent construction works. In the absence of mitigation, the extent and magnitude of such temporary impacts, although uncertain, is evaluated to be relatively low owing to such retained habitat being predominantly restricted to the GI work areas. Such temporary negative effects are therefore only considered to be at a Site level and not significant in EIA terms.

12.154 The Proposed Development has been designed to incorporate the hedgerow network and minimise its fragmentation where possible, particularly around the perimeters. However, large losses are unavoidable given the nature of the Proposed Development. The approximate anticipated extent of direct loss based on the Illustrative Landscape Strategy (see Figure 11.15) (document reference 6.3.11.15) is provided in Table 12.7.

Table 12.7: Summary of predicted hedgerow loss.

Category of hedgerow	Total length (m)	Loss (m)	Loss (% of total)
Species-rich hedgerows with trees - intact	4,130	2,370	57.38

Category of hedgerow	Total length (m)	Loss (m)	Loss (% of total)
Species-poor hedgerows with trees - intact	680	390	57.35
Species-poor hedgerows with trees - defunct	90	0	0.0
Species-rich hedgerows - intact	7,900	5,790	73.29
Species-rich hedgerows - defunct	1,240	1,020	82.26
Species-poor hedgerows - intact	4,540	4,120	90.75
Species-poor hedgerows - defunct	300	300	100
Total	**18,880**	**13,990**	**74.10**

12.155 The direct loss and fragmentation of the existing hedgerow network is considered to be of high magnitude and extent. In the absence of further mitigation, such permanent impacts are therefore certain to constitute a significant negative effect at a District level.

12.156 In addition, during the construction phase retained hedgerows may be subject to indirect degradation impacts, such as soil compaction and encroachment by machinery resulting from adjacent construction works. In the absence of mitigation, the extent and magnitude of such temporary impacts, although uncertain, is evaluated to be relatively low owing to such retained habitat being predominantly restricted to the GI corridors. Such temporary negative effects are therefore only considered to be at a Site level and not significant in EIA terms.

Broadleaved semi-natural and plantation woodland

12.157 All of the broadleaved semi-natural woodland will be retained and provided with a reasonable buffer from the Proposed Development. The broadleaved semi-natural

woodland is therefore not at risk of direct impacts during construction. However, as discussed above, there remains a risk, albeit low, that indirect degradation impacts resulting from adjacent construction works may arise. Owing to the low risk and limited extent and magnitude of such impacts, the effect is considered to be temporarily negative at a Site level only and not significant in EIA terms.

12.158 As outlined within the BIA (Appendix 12.2, document reference 6.2.12.2), a total of 0.4ha of broadleaved plantation woodland will be lost to facilitate the Proposed Development. This loss is considered to be temporary as much larger areas of new woodland planting will be created, forming ecological and landscape buffers around the Proposed Development. The effect will therefore be temporary, direct loss and is considered to constitute a negative effect which is reversible. The significance of such effects in the absence of mitigation is considered to be at a Site level and as a result is not significant in EIA terms.

Ponds

12.159 The unavoidable loss of five ponds (an area measuring approximately 0.48ha in total) is anticipated to facilitate the Proposed Development. The direct loss of these ponds is considered to be of moderate magnitude and extent. In the absence of further mitigation, such permanent impacts are therefore considered to constitute a significant negative effect at a Local level.

Wet ditches

12.160 The vast majority of permanently wet ditch habitat will be retained and provided with a reasonable buffer from the Proposed Development. They are therefore not at risk of direct impacts during construction. However, as discussed above, there remains a risk of indirect negative impacts arising from vehicular encroachment and silt laden/polluted run-off entering the ponds. Most of the waterbodies currently appear to be subject to low level pollution and sediment run-off from the surrounding intensively farmed arable fields. In light of this, such temporary and reversible impacts, although uncertain and potentially of moderate magnitude, would result in a negative effect at a Site level only and therefore not significant.

Stream

12.161 The re-routing of the existing stream corridor along its length is unavoidable to facilitate the Proposed Development. The stream will also need to be culverted at certain points along its length to pass beneath new roads. The stream will, however, be reinstated along a new course, allowing for a naturalistic profile and the establishment of vegetation which is currently absent. Due to its connectivity with the wider landscape, the re-routing of the stream is considered certain to be a permanent, significant negative effect at a Local level.

12.162 The culverting of the stream under new roads has the potential to sever connectivity with the wider landscape and will reduce the extent of stream habitat. Such direct impacts are considered certain to be moderate in magnitude, causing permanent, negative effects significant at up to a Local level.

12.163 Furthermore, in the absence of additional mitigation, the watercourse could be at risk of indirect negative impacts arising from vehicular encroachment and silt laden/polluted run-off entering the water. The magnitude of such indirect impacts during construction is uncertain given that it is only a possibility of happening, however, given the development offset incorporated within the design and that development is only proposed near a relatively small section of the brook, such negative indirect effects are considered to be significant at up to a Local level.

Semi-improved neutral grassland

12.164 Due to its positioning along the M69 corridor, almost all of the semi-improved neutral grassland will be retained and provided with a reasonable buffer from the Proposed Development. The majority of the grassland is therefore not at risk of direct impacts during construction. However, as discussed above, there remains a risk, albeit low, that indirect degradation impacts (including pollution events, deposition or storage of materials and compaction) resulting from adjacent construction works may arise. Owing to the low risk and limited extent and magnitude of such impacts, the effect is considered to be temporarily negative at a Site level only and not significant in EIA terms.

12.165 A minor loss of grassland on the road verge to the south of Freeholt Meadow to allow the construction of a new access road is expected as part of the Proposed Development. Such direct, permanent, negative impacts are considered significant at up to a Local level.

Species

Winter bird assemblage

12.166 Given the prevalence of over-winter species within open, arable land and associated hedgerows in the centre of the Main Order Limits, the loss of such refuge and foraging habitats during construction has the potential to have significant effects on the wintering bird assemblage. Many of the declining farmland species over-wintering and breeding on site (e.g. skylark, fieldfare, lapwing and to a lesser extent yellowhammer and linnet) utilise these habitats exclusively and would be displaced into the surrounding farmland (for example to the north). Given the extent of permanent agricultural habitat loss the impact would be of relatively high magnitude and therefore would result in a permanent significant negative effect at a Local level on over-wintering farmland birds. The negative effect on more generalist species, including many of conservation concern (e.g. song thrush, starling, house sparrow), would not be significant.

12.167 In the absence of mitigation, disturbance of other retained habitat through noise, visual and human disturbance during construction is likely to be moderate in extent and duration. While many of the urban fringe species present are likely to already be habituated to some level of disturbance (presence of dog walkers/proximity of urban edge), as a precaution this temporary negative effect is considered to be significant at a Local level.

Breeding bird assemblage

12.168 In view of the inherent mitigation measures reflected in the retention of notable habitat features within the design layout, the loss and degradation of potential bird nesting and foraging habitats during construction will primarily be restricted to arable farmland and internal hedgerow and tree habitat. Given the extent of permanent agricultural habitat loss, the impact would be of relatively high magnitude and therefore would result in a permanent significant negative effect at a District level on farmland birds, particularly those that nest on the ground. The negative effect on more generalist species, including many of conservation concern (e.g. song thrush, starling, house sparrow), would not be significant.

12.169 The direct killing or harm to birds at the nest (and their eggs and young) could potentially arise during construction works if undertaken during the breeding season. Such impacts would be an offence under the Wildlife and Countryside Act (1981) (as amended). Avoidance of direct killing/injury, to ensure legal compliance, is therefore assumed to be inherent mitigation such that no significant effects will occur in this respect.

12.170 In the absence of mitigation, disturbance of retained nesting and foraging habitat through noise, visual and human disturbance during construction is likely to be moderate in extent and duration. While many of the urban fringe species present are likely to already be habituated to some level of disturbance (presence of dog walkers/proximity of urban edge), as a precaution this temporary negative effect is considered to be significant at a Local level.

Bat assemblage

12.171 It is anticipated that approximately 63 trees will be lost that contain bat roosting potential (10 with high potential to support roosting bats, 17 with moderate potential and 36 low potential) as a result of the Proposed Development. While the loss of potential roosting resource is not currently considered to be significant in EcIA terms, owing to the transitory nature of roosts, particularly tree roosts, potential roost features may become occupied by roosts in future that would be subject to legal protection. As such, they require further consideration with respect to update surveys and mitigation to ensure there is no breach of legislation, as discussed further subsequently. Survey updates will be undertaken in line with adopted guidance and prior to any removal of any trees.

12.172 All existing buildings within the Main Order Limits will be lost, including ~~two~~ four buildings which support ~~confirmed~~ bat roosts and ~~five~~ six buildings with medium potential to support roosting bats. Whilst the loss of potential roosting resource is, again, not currently considered to be significant in EIA terms, in the absence of additional mitigation, the loss of two confirmed roosts, given their consistent use throughout the summer by two species of bat (*Plecotus auritus* and *Pipistrellus pipistrellus*), is likely to result in a permanent, negative effect significant at a Local level.

12.173 The destruction of a known bat roost, and/or direct killing or harm to bats would be an offence under the Conservation of Habitats and Species Regulations 2017 (as amended). Avoidance of direct killing/injury, and roost destruction under a NE EPS Licence, to ensure

legal compliance, is therefore assumed to be inherent mitigation such that no significant effects will occur in this respect.

12.174 Despite the Proposed Development layout retaining and buffering the key habitat features and corridors around the perimeter, such as the woodland copse and part of the hedgerow and tree network, as outlined under the hedgerow/tree line subsection, approximately 13,990m of hedgerow will be lost, including several hedgerow breaches resulting from the road layout. This is likely to have a detrimental impact upon the local bat assemblage's ability to move and forage across the local landscape. In the absence of mitigation, the negative effect of the direct and permanent habitat loss and severance impacts of the Proposed Development on the bat assemblage is considered to be likely significant at a Local level.

12.175 Indirect disturbance (e.g., light spill, visual and noise) of retained commuting, foraging and potential roosting habitat, may also result from adjacent site works during construction. In light of the inherent buffering afforded to retained habitat features such as the woodland and partial hedgerow/tree network, and anticipated restrictions in working hours at night, it is considered that the magnitude and extent of such temporary impacts upon the bat populations would be minimised and therefore not significant.

12.176 Furthermore, the most commonly recorded bats (*Pipistellus pipistrellus, Nyctalus noctula*), are not considered to be particularly sensitive to lighting impacts when foraging or commuting[2]. However, due to the uncertainty regarding the magnitude and extent of such impacts, a precautionary approach to the assessment of effects has been adopted. Such likely negative effects on the bat assemblage, although likely to be low and temporary, are therefore considered to be potentially significant at a Local level.

Badger

12.177 Badgers have not been considered as an IEF due to their importance at a geographic scale, however, they are included as an IEF owing to the legal protection they are afforded. A subsidiary and an outlier sett will be completely lost as a result of the Proposed Development. Given the extent of the Proposed Development, it was not possible to retain the setts.

12.178 It is assumed that all of the currently active holes/setts would be directly lost or impacted by construction works in their vicinity. There is therefore a risk of directly killing or harming badgers within their holes during construction. In addition, badgers could be indirectly and temporarily disturbed by noise, vibration and or lighting from construction activities around the badger sett, in addition to the loss and disruption of foraging habitat. This in turn could result in loss of condition/vigour of adults and reduced breeding success.

12.179 The direct killing or injury of badgers and/or disturbance of badger setts would be an offence under the under the Protection of Badgers Act (1992). As such, a mitigation

[2] Stone, E.L. (2013) Bats and lighting: Overview of current evidence and mitigation.

licence will be sought from NE to close the setts and encourage the badgers out of the development footprint.

12.180 Avoidance of direct killing/injury, and sett disturbance or destruction under an NE Licence, to ensure legal compliance, is therefore assumed to be embedded mitigation such that no significant effects will occur in this respect.

Otter

12.181 Due to the re-routing of the stream along part of its length, there will be no permanent, direct loss of otter habitat during construction. However, given the need to culvert the stream to allow new road access, the habitat is likely to become fragmented. The provision of outfalls from the drainage strategy and construction of head walls may also disturb the banks of the watercourse. As no otter resting places (holts) were recorded during the survey there is little possibility of having an adverse impact on the species.

12.182 However, in the absence of mitigation, disturbance of retained riparian habitat through noise, visual and human disturbance during construction is likely to be moderate in extent and duration owing to the phasing of the Proposed Development over a number of years. While the population of otter utilising the habitats adjacent to the Main Order Limits is small and this species is known to tolerate relatively high levels of disturbance[3], as a precaution this temporary negative effect is considered to be potentially significant at a Local level.

European hare

12.183 Due to the breeding behaviour of hares, which tend to make use of open fields and hedgerows, the loss of almost all arable land and much of the hedgerow network within the Main Order Limits will mean an almost total loss of habitat for the species. The loss of arable habitat is therefore considered to cause a certain, permanent, negative effect significant at a Local level.

Common toad

12.184 As discussed above, all five ponds will be lost. Although no breeding behaviour was witnessed, and no eggs found, juvenile and adults toads were found across the Main Order Limits. Toads were also present within terrestrial habitat surrounding the ponds, including rough field margins and the hedgerow network. To mitigate this, 21 new ponds will be constructed as part of the Proposed Development, mostly situated within or near new grassland, woodland and hedgerow habitats, meaning that the loss of habitat will be temporary.

12.185 The temporary loss of the ponds and surrounding terrestrial habitat is therefore considered likely to cause temporary, negative effects significant at up to Local level.

[3] Crawford, A.K., (2010) The fifth otter survey of England 2009 – 2010. Environment Agency, Bristol

Operational impacts and effects

12.186 Likely impacts identified, which could arise as a result of the operation of the Proposed Development in the absence of mitigation include the following:

- impacts of light and noise/visual/human disturbance to habitats and species;
- increased risk of nitrogen deposition on sensitive habitats due to increased air pollution;
- increased risk of collision to species arising from increased traffic movements; and
- alteration of groundwater flows.

Designated sites

Statutory designations

12.187 Burbage Wood and Aston Firs SSSI and Burbage Common and Wood LNR are considered to be at risk of indirect impacts resulting from increased air pollution as a result of increased traffic relating to the Proposed Development. It is also considered possible that indirect impacts may result from changes to the local hydrology. Although the integrity of the mature trees themselves is unlikely to be significantly harmed, it is possible that the woodland ground flora would suffer from the effects of nitrogen deposition.

12.188 The Air Quality Chapter (chapter 9) (document reference 6.1.9) has considered the effect of the Proposed Development on the deposition of nutrients on the statutory designated sites as a result in the traffic modelling and in terms of the back-up Combined Heat and Power (CHP) unit.

12.189 The back-up CHP is factored to be operational for no more than 10% of the year. However, on a precautionary basis the operational phase back-up CHP emissions assessment was undertaken to consider the impact of the operation of the back-up CHP operating for 10% of the year, and also at 30% of the year to consider an abnormal use scenario.

12.190 Tables 9.35 and 9.36 within the Air Quality Chapter (chapter 9) (document reference 6.1.9) show that at both the opening year and the future year 2036 at full operation the CHP will not give rise to an increase nitrogen deposition. Therefore, the CHP would not give rise to any additional deposition during the operational phase.

12.191 The operational phase of the HNRFI has also shown in Tables 9.29 and 9.30 within the Air Quality Chapter (chapter 9) (document reference 6.1.9) that although there will be some increase at ecological receptors above 1% of the critical load, these do not exceed an increase of more than 1% of the current baseline deposition without the HNRFI. Therefore, these increases would not be considered significant in EIA terms. It should also be noted that the overall levels of nitrogen deposition at the ecological receptors all decrease from the opening year to the full operational year and therefore there will be a betterment over the existing situation.

12.192 Disturbance-related impacts have, to some degree, been mitigated through the provision of buffer and screen woodland planting, including the provision of a new wildlife area in the west and significant areas of GI throughout the Proposed Development. A minimum 25m operational buffer will be maintained adjacent the SSSI woodland, with a buffer of up to 50m more typical. However, there remains a small disturbance risk and given the ecological interest features of the SSSI and LNR, it is considered that the extent and magnitude of such reversible impacts, on a precautionary basis, would be significant at up to a National level.

12.193 There is a possible risk of increased recreational disturbance to the Burbage Wood and Aston Firs SSSI and Burbage Common and Wood LNR due to increased footfall. However, this is considered to be minimal due to the commercial nature of the Proposed Development. The increase would be minimal by comparison to residential development and would generate very little additional dog walking activity. There is the potential for existing recreational users of the Main Order Limits Site to be displaced towards the SSSI and LNR. In the absence of further mitigation, these factors could potentially result in a permanent, reversible significant negative effect at a County to National level.

Non-statutory designations

12.194 Field Rose Hedgerow LWS, Elmesthorpe Plantation Hedgerow LWS, Woodland adjacent to Aston Firs pLWS, Elmesthorpe Boundary Hedgerow pLWS and Burbage Common Road Hedgerow pLWS are not considered to be at risk of operational impacts, due to landscape buffer, and the nature of the development.

12.195 The risk of possible degradation to the Borrow Pit LWS, Billington Rough LWS and Hay Meadow LWS from nitrogen deposition due to increased traffic in the area has been considered as part of the Air Quality Assessment (document reference 6.1.9). This concluded that the Proposed Development would not give rise to any significant additional deposition during the operational phase and therefore such impacts are not taken forwards for assessment in this chapter.

12.196 Similarly, the risk of possible degradation to the Castlewood Grassland pLWS, Junction 2 Grassland pLWS, B4669 Road Verge pLWS and Stanton Road Verge 2 pLWS from nitrogen deposition due to increased traffic in the area has been considered as part of the air quality assessment. This concluded that the Proposed Development would not give rise to any significant additional deposition during the operational phase and therefore such impacts are not taken forwards for assessment in this chapter.

12.197 The potential of degradation due to changes in hydrology to Billington Rough LWS has been assessed as part of the Hydrogeological impacts at chapter 15 (document reference 6.1.15). This concludes that there will be no significant changes to the local hydrology and therefore such impacts are not taken forwards for assessment in this chapter.

Habitats

12.198 Important habitats which are to be fully or partially retained within the Proposed Development would be at risk of impacts during the lifetime of the Proposed Development

from damage/incursion by commercial tenants, deterioration through a lack of management, increased levels of air pollution and/or changes in the quality and volume of water run-off.

12.199 As a result of inherent mitigation built into the scheme design, much of the retained hedgerow/tree/woodland network and the redirected watercourse fall within areas of open space that contain new attenuation features. This helps to minimise the potential for such impacts to arise and allows for long-term centralised management through the establishment of a management company. Such negative reversible effects on these habitats during operation are therefore judged to be of influence at a Site level, rather than the Local and District level values ascribed to these IEFs, and therefore not significant.

Species

Breeding and wintering bird assemblage

12.200 Retained habitats supporting breeding, foraging and over-wintering birds are likely to be at risk of disturbance and damage during the operational phase of the Proposed Development. Increased vehicular traffic arising following occupation could also increase risk of collision to bird species moving across the Proposed Development.

12.201 Owing to the buffer afforded to retained habitats such permanent and irreversible negative impacts are considered to be relatively low in magnitude and only of influence at a Site level and therefore not significant.

Bat assemblage

12.202 The Proposed Development could result in light spill and disturbance to foraging, commuting and potentially roosting bats along retained habitats during the operational stage of the Proposed Development. Such impacts have been minimised through inherent buffer afforded to the main commuting and foraging habitat features such as the woodland, hedgerow and tree network. Furthermore, bats will be at increased risk of traffic collision.

12.203 In the absence of further mitigation, this could potentially result in a permanent, irreversible, significant negative effect at a Local level.

Badger

12.204 Badgers are likely to be at higher risk of collisions with vehicles and disturbance from humans. However, recognising that sett-building and foraging opportunities are present in suitable adjacent farmland off-site and within new woodland areas, and this species' ability to successfully adapt to and inhabit urban areas, combined with the species value, such permanent, irreversible negative effects will at most be significant at a Site level.

Otter

12.205 Otters will potentially be at risk of collisions with vehicles and disturbance by humans associated with the new development. Unforeseen pollution incidents or other impacts upon water levels and water quality of the stream may also impact upon otters utilising this feature.

12.206 However, recognising that dispersal and foraging opportunities are present in suitable adjacent habitat off-site up and down stream and owing to this species known tolerance of high levels of disturbance, such permanent, irreversible negative effects are considered significant at a Local level.

Common toad and GCN

12.207 The Proposed Development could result in light spill and disturbance to aquatic and terrestrial habitats supporting common toad during the operational stage. Such impacts have been minimised through inherent buffer afforded to the main suitable habitat features such as the waterbodies and hedgerow network. Furthermore, common toad will be at increased risk of traffic collision.

12.208 Unforeseen pollution incidents or other impacts upon water levels and water quality of new waterbodies may also impact upon GCN utilising these features.

12.209 In the absence of further mitigation, these factors could potentially result in a permanent, irreversible significant negative effect at a Local level.

Decommissioning

12.210 Given the nature and intended longevity of the Proposed Development's operational life, decommissioning has not been considered relevant as part of this study. Accordingly, the EIA is to focus on the potential likely significant effects of the Proposed Development during construction and operational phases.

PROPOSED MITIGATION

12.211 Overall, negative effects have been avoided or reduced through inherent mitigation incorporated into the parameters plan (see ES Chapter 3) (document reference 6.1.3 and ES figure 3.2, document reference 6.3.3.2) and Illustrative Landscape Strategy (see Figure 11.20) (document reference 6.3.11.20). However, not all likely significant negative effects can be avoided or reduced in severity through inherent mitigation alone. This section identifies those additional mitigation measures required to avoid, reduce or offset the likely significant negative impacts. The key mechanisms described will include measures to:

- conform with relevant and pertinent legislative requirements, particularly those associated with legally protected species;
- mitigation measures to replace habitats of value lost and to provide habitat for species identified as IEFs; and

- deliver and, where reasonably practicable, maximise opportunities for biodiversity enhancement and gain through the proposals.

12.212 The key mechanisms which would be implemented are:

- Detailed Design Measures – the submitted designs, such as the Landscape Strategy, are illustrative and allows flexibility for specific detailed design measures to be secured and included within the Proposed Development. However, those measures identified within this document and detailed within the Landscape Strategy are considered necessary and therefore should be secured through suitably worded requirements in the DCO. Aspects of the detailed design which are especially relevant are as follows:

  - external lighting – to be designed to avoid impacts on nocturnal wildlife where in close proximity to retained habitats;

  - surface water drainage system – to be designed to maintain/improve water quality and maintain existing run-off rates, and provide additional wetland habitat; and

  - soft landscape scheme (SLS) – to be designed to include new habitats of ecological value within the areas of open space. The open space is designed to buffer retained/enhanced habitats, with indicative buffer widths illustrated on Figure 11.17 Illustrative Landscape Sections (document reference 6.3.11.17).

- The EMMP (document reference 17.5) sets out in detail the measures which will require implementation with respect to IEFs during the demolition and construction phase of the Proposed Development. It is proposed that the methodologies prescribed within the EMMP will be overseen by an appointed Ecological Clerk of Works (ECoW). An ECoW would be appointed by the principal developer and provide advice about ecological and environmental issues during the construction of a development. The ECoW will monitor works to ensure compliance with relevant legislation, planning ~~conditions~~ requirements and associated documents and to help reduce risks and delays. The ECoWs scope and remit will be set out within the EMMP. The EMMP and appointment of the ECoW will be secured by way of a suitably worded DCO requirement. The CEMP (document reference 17.1), setting out more general environmental control measures during construction (e.g. pollution control), is also provided as part of this DCO. A detailed CEMP for the Proposed Development, or phases of the Proposed Development will be secured by way of a suitably worded DCO requirement; and

- the LEMP (document reference 17.2) – This document sets out the measures for the ongoing management, maintenance and monitoring of the IEFs and of those newly created habitats to maximise opportunities for biodiversity enhancement and gain. Owing to the number and duration of development phasing proposed, a strategic site-wide LEMP has been provided as part of the DCO application. This provides a holistic framework to which subsequent detailed development phase LEMPs should accord. The detailed LEMPs could be secured by way of a suitably worded DCO requirement.

12.213 The proposed mitigation in respect to the likely negative effects of construction and operation, even if not considered to be significant in EIA terms (i.e., effects that are significant at less than the Local level) are described below.

Construction

12.214 Prior to commencement of any clearance or construction works, further tree climbing inspections are to be undertaken during the bat active season (April to September inclusive) of the small number of trees with moderate or higher bat roosting potential that will be impacted by the Proposed Development, as noted within Appendix 12.1, (document reference 6.2.12.1).

12.215 Detailed species surveys will be updated prior to commencement of the development or relevant phase of development as appropriate depending upon the final development programme. The findings will be used to inform the measures set out below.

12.216 Detailed measures to protect habitats and species during the construction phase are set out in an EMMP (document reference 17.5) which would be secured through an appropriately worded pre-commencement requirement forming part of the DCO.

Designated sites and habitats

12.217 The EMMP contains measures to ensure that the statutory and non-statutory designated sites and all valued habitats retained within and adjacent to the Proposed Development are fully protected during construction activities.

12.218 Measures include the establishment of Ecological Protection Zones (EPZs), protected by fencing and signage to prevent activities such as the incursion by vehicles or personnel, fires and stockpiling of materials.

12.219 Further measures for the aquatic features (the stream corridor, pond and ditch network) include implementation of best practice to ensure that any discharge of surface water into the natural environment is of acceptable levels and quality, as further assessed within ES Chapter 14 (document reference 6.1.14), and the risk of likely pollution events including spills, leaks and other incidents during the construction phase will be minimised through adherence to best practice such as the 'former' Environment Agency's Pollution Prevention Guidance Notes (PPGs), which are still considered current best practice.

12.220 Subject to implementation of the above measures, construction effects on these IEFs will be reduced to not significant levels. Habitat losses will be addressed through new habitat creation during and after construction; this is discussed further under the operational mitigation section.

Species

12.221 Protection of species during construction is ensured through the provisions of the EMMP. As a general measure aimed at protecting species, 'tool box briefings' will be provided by a suitably qualified ecologist to the principal contractor appointed by the developer, for

distribution to all employees involved in any enabling works/vegetation clearance. This will ensure that identification and protection of the relevant species and their habitats is understood.

12.222 In addition to the habitat protection measures described above, which will deliver much of the necessary species protection, further measures are included in the EMMP for each species group as summarised below:

Birds

- Retained nesting habitats included within EPZs; and
- removal of potential nesting habitat will be undertaken outside the bird breeding season (namely March to August inclusive) unless a detailed survey by a suitably experienced ecologist has confirmed that no nests are present in the affected area immediately prior to works commencing.

Bats

- Retained trees with bat roost potential included within EPZs;
- restricted working hours and use of lighting to minimise disturbance to bat foraging and commuting habitats;
- update surveys of trees with bat roost potential prior to felling/pruning. If bat roosts are confirmed present, cessation of works until an appropriate strategy is devised and agreed under licence with NE to ensure that there is no contravention of the legal protection afforded to bats. In the event that this is required, retained trees and/or proposed new buildings would provide ample opportunity to provide replacement roosting habitat to mitigate any losses, thereby maintaining the favourable conservation status of the bat population and ensuring that a licence would be granted by NE; and
- similarly, an appropriate strategy for the removal of bat roosts within existing buildings will be devised and agreed under licence with NE, including identification of suitable mitigation.

Otter

- Otters will be excluded from the watercourse and all associated riparian habitat throughout construction, particularly during the establishment of the redirected stream channel. Retained lengths of the stream will be included within EPZs;
- update surveys of riparian habitat to be affected by outfall construction to check for otter resting places;
- restricted working hours and use of lighting to minimise disturbance to otter foraging and commuting habitats; and

- good practice construction measures to ensure otters are either unable to access the construction site or cannot become trapped in excavations (e.g. through covering up at night or inserting an 'escape ramp').

Badger

- Update badger survey prior to works commencing;

- assuming the setts identified as being impacted by the Proposed Development continue to be active following update surveys, temporary and/or permanent sett closure under a NE licence will be required. The level of closure will be dependent on the detailed design and an appropriate mitigation strategy agreed via licencing to ensure that works are carried out legally. Any closure will take place outside of the breeding season (July to November inclusive) using one-way gates. If required, an alternative sett would be created within nearby green space that is not subject to very high levels of disturbance and has appropriate green corridors connecting it with the wider landscape, in advance of the sett closure. The areas of higher ground within the boundary landscape areas and the southwest open space area within the Main Order Limits presents a suitable location. Following 21 days of no activity, development works could commence with the gates only removed following completion of the ground works; and

- good practice construction measures to ensure badgers are either unable to access the construction site or cannot become trapped in excavations (e.g. through covering up at night or inserting an 'escape ramp').

Invertebrates

- Retained habitats included within EPZs;

- new habitat will be created and enhanced to provide opportunities for invertebrates during the construction period and post development, as described above; and

- a sensitive lighting strategy (document reference 6.2.3.2) has been designed to ensure that light spill to surrounding habitats has been kept to a minimum and dark corridors surrounding the proposals will ensure continued opportunities for nocturnal insects (i.e. moths).

Summary of construction effects on species

12.223 Subject to the above being implemented, construction effects on species will be avoided or mitigated to provide a not significant impact.

Operation

12.224 The LEMP (document reference 17.2) has been developed to ensure the long-term conservation of retained and created environmental resources, including habitats and species of ecological value. The overarching LEMP has been drawn up in parallel with the

Landscape Scheme for the Proposed Development, which include detailed specifications for the planting/creation of new habitats.

12.225 It will be necessary for the LEMP (document reference 17.2) to be developed further prior to the initiation of the construction phase and it is proposed that the LEMP forms the basis for subsequent LEMPs for each ~~reserved matters~~ phase~~s~~ coming forward. It will also be necessary, prior to the construction phase, to identify the implementation responsibilities of the management plan through the initial contractor and future management through a management company.

12.226 The EMMP sets out the objectives and principles covering the construction phase and long-term management of ecology interests. Monitoring of the effects of the implemented measures will form the basis for any revision of the scheme.

Statutory designations

12.227 There is considered to be a potential risk of negative indirect impacts upon Burbage Wood and Aston Firs SSSI resulting from increased recreational pressure associated with the Proposed Development. The following mitigation measures are therefore proposed:

- the implementation of an ~~Access~~ Woodland Management Plan (document reference 6.2.12.4), which will detail:
  - an access and movement management strategy, that details the location and routes of proposed and existing access points and permitted routes for walking within the Proposed Development as an alternative to the woodland. This will also detail how measures will be implemented to restrict access into more sensitive areas, such as wet woodland and encourage responsible use of the woodland through the provision of information and signage within the Proposed Development;
  - a monitoring programme to ensure that the measures being implemented are fit for purpose and that the woodland is not being detrimentally affected.
- Funding/responsibility for ongoing management and monitoring.

12.228 Subject to the implementation of the above measures, indirect adverse impacts from recreational pressure would be reduced to not significant levels (i.e. negative at a Site level only). Although this assertion carries a degree of uncertainty, any not significant residual negative impacts would also be compensated through adjacent complimentary planting and grassland establishment within the landscape boundary areas, the open space and the area to the south of the A47 Link Road, which will also be enhanced through active management. It is therefore considered that even on a precautionary basis, indirect adverse impacts from recreational pressure would be reduced to not significant levels.

Non-statutory designations and habitats

12.229 The EMMP (document reference 17.5) includes measures to restore, maintain and enhance the non-statutory designations and other valued habitats on-site, including the

grassland, hedgerows, trees and woodland, in order to increase their resilience and mitigate long-term disturbance effects. In addition, the EMMP includes measures to establish and maintain new habitats of long-term ecological value within the Proposed Development's open spaces.

12.230 The extent of important ecological habitats within the Main Order Limits, and the quantities retained, lost and proposed, have been assessed using the DEFRA Metric 3.1 BIA Calculator. These BIA calculations, which are provided in Appendix 12.2, (document reference 6.2.12.2), have been used to objectively provide an overall biodiversity score for the Proposed Development.

12.231 It should be noted that this score is based on the Illustrative Landscape Strategy (document reference 6.3.11.20) and has been calculated with a number of assumptions based on defined parameters set out within the Appendix 12.2, (document reference 6.2.12.2). It will therefore be subject to some variance at the detailed design stage. However, subject to the delivery of appropriate measures relating to habitat provision and management, this is considered to be an appropriate plan for assessing the overall biodiversity impact of the Proposed Development.

12.232 As shown in Appendix 12.2, (document reference 6.2.12.2), the Proposed Development does not achieve 10% net biodiversity gain on site in either linear habitats or habitat areas. The Proposed Development will therefore require either contributions towards off-site habitat creation and/or enhancement and/or the provision of an offsite area of land to be provided in connection with the Proposed Development, in order to offset the number of negative units calculated and provide the 10% net gain. The BIA calculations (see Appendix 12.2(document reference 6.2.12.2)) have identified an area of offsite mitigation land in close proximity to the Main Order Limits to ensure maximum benefits to the local area and has been included in the calculator. Negotiations are ongoing to secure this land. Although this does not meet current planning policy requirements and the Environment Act (November 2021) requirements for developments to deliver a 10% net gain in biodiversity, the additional 23.44 units will be achieved through an offsetting scheme, such as the Environment Bank, in order to achieve 10% net gain. Discussions with the Environment Bank have been undertaken and will be progressed.

12.233 If the offsite land cannot be secured or an alternative area of suitable offsite mitigation cannot be found then it is envisaged that the Proposed Development would commit to the 10% biodiversity net gain, with any short fall picked up through ~~an offsetting~~a credit scheme, such as the Environment Bank. Provided this is achieved, the Proposed Development will be in accordance with national and local planning policy, which requires developments to achieve no net loss in biodiversity, and will aim to provide a minimum of 10% net gain in line with the future requirements of the Environment Act 2021.

12.234 Measures included within the LEMP to create, enhance and manage habitats are summarised below:

Meadow grassland

- Sowing of new species-rich meadow grassland (including dry and wet mixtures) across open spaces and sensitively managed to benefit birds, bats, badgers, other small mammals, amphibians, reptiles and invertebrates;
- shade tolerant grassland mixes to be sown adjacent woodland, helping to create structurally dynamic ecotone habitat; and
- sensitive management of retained semi-improved neutral grassland along the M69 corridor.

Scattered trees, scrub and woodland/structural planting

- New native tree and shrub planting within the Proposed Development's wildlife and open space areas and along the internal roads and boundaries;
- ongoing viability and safety of tree stock on-site maintained including arboricultural inspections in accordance with industry best practice;
- pruning of retained and new tree stock as necessary and in accordance with industry best practice; and
- management of retained woodland parcels (excluding woodland adjacent to Aston Firs LWS, which is covered above in the non-statutory designations section) through ongoing viability/safety of tree stock maintenance, pruning as necessary, clearance of successional scrub, creation of deadwood piles, litter picking and fencing where appropriate.

Hedgerows/tree lines

- Retained hedgerows restored where relevant through selective trimming/laying and planting with native species in gaps;
- planting new native species-rich hedgerow within the Proposed Development's open spaces that connect green spaces in order to offset some of the losses incurred through the construction of the Proposed Development; and
- sensitive management of new and retained hedgerows, such as trimming on a rotation to allow plants to develop flowers and fruit in order to enhance value to a variety of wildlife.

Ponds

- Creation and management of SuDS that will not only ensure the rate of surface water run-off from the Proposed Development matches current levels, but would also intercept pollutants and provide habitat for a variety of wildlife;

- planting and management of the attenuation features, including the creation of reed beds, to enhance their ecological value and effectiveness at intercepting pollutants, including permanent ponds designed for wildlife; and

- a series of wildlife dedicated ponds (i.e. ponds outside the SuDS network and managed specifically for biodiversity) with a range of depths will be created within the areas of informal open space. These will be of significant benefit to a range of faunal groups, not least amphibians.

Watercourse

- Re-profiling of banks following redirection to create a more naturalistic channel, suitable for a range of riparian species;

- the addition of riffles and lags in order to create a variety of niches suitable for a range of invertebrate and fish species; and

- planting and management of riparian vegetation along the stream corridor.

12.235 The proposed measures described above would ensure the level of net loss in habitats of ecological value is minimised in accordance with the BIA calculations (see Appendix 12.2, (document reference 6.2.12.2)). The creation of meadow grassland, in addition to hedgerow, woodland, wetlands, the redirection and enhancement of the stream corridor and the contribution towards off-site habitat enhancement or creation will potentially result in a beneficial significant effect on these habitats at a Local level and contribute to an overall net gain in valuable habitats.

Species

12.236 As described above, the LEMP (document reference 17.2) for the Proposed Development includes measures to restore, maintain and/or enhance habitats of ecological value. Provided these habitats are created and maintained in appropriate locations which are accessible to wildlife, this would also benefit valued species occurring within and around the Proposed Development through the provision of enhanced opportunities for breeding, refuge, foraging and/or dispersal. In general terms, these habitats should be sympathetically managed according to protected species interests as detailed within the LEMP (document reference 17.2). Human related disturbance impacts should be addressed through the appropriate positioning and clear demarcation of routes through the Proposed Development, in addition to the use of strategic structural planting and/or fencing.

12.237 Additional species-specific measures to minimise operational impacts and provide enhanced opportunities for species breeding and refuge are detailed within the LEMP as summarised below:

Birds

- Management of areas of the wildlife area and other green infrastructure areas to ensure that habitats suitable for nesting skylark, linnet and yellowhammer as well as foraging barn owls are provided;
- a total of 68 durable bird boxes, including a range of designs to suit different species, will be erected on retained mature trees; and
- bird nesting features (e.g. swallow/swift ledges and sparrow terraces) will be incorporated into selected new buildings within the Proposed Development.

Bats

- A total of 68 durable bat boxes, including a range of designs to suit different species, will be erected on retained mature trees;
- bat roosting features will be incorporated into selected new buildings; and
- a sensitive lighting scheme, which ensures retained and new bat habitats are not illuminated to a level where bat activity is deterred (typically considered to be 1 lux).

Otter

- A sensitive lighting scheme, which ensures the new stream corridor and associated habitats are not illuminated to a level where otter activity is deterred (up to 1 lux);
- restricting public access to the river corridor through the provision of clear footpaths, fencing and strategic landscape planting to minimise disturbance; and
- creation of new wetland habitat along the stream corridor.

Badger

- Traffic calming schemes near the retained off-site sett on the western edge of the Main Order Limits, with speed restrictions and/or fencing along the road to reduce the risk of collisions with traffic; and
- sympathetic planting adjacent to off-site setts, including cover planting (where appropriate) and fruit tree planting provided as an additional foraging resource.

Common toad

- The retained and new waterbodies across the Proposed Development and wider landscape that support toads will be connected via green corridors to ensure they do not become isolated by the Proposed Development, as well as to ensure sufficient carrying capacity for the population present. In addition, these green corridors will be enhanced through the provision of swales and other attenuation features,

installation/maintenance of hibernacula and management to promote a rank grassland sward; and

- a number of the newly created ponds will be enhanced and managed specifically for their potential to support amphibians and other species.

Other species

- Creation of 10 log piles and 8 hibernacula to enhance opportunities for invertebrates, amphibians, reptiles and small mammals such as hedgehogs;

- low level management of marshy/meadow grassland to create rank and tussocky areas that provide opportunities for reptiles, amphibians, invertebrates and other wildlife; and

- the sensitive lighting strategy (ES Appendix 3.2, document reference 6.2.3.2) will ensure continued opportunities for moths, a key prey resource for foraging bats.

12.238 Subject to the above, no significant effects on species during the operational phase of the Proposed Development are anticipated.

12.239 With respect to birds, while the farmland assemblage will be displaced into the surrounding landscape, other more generalist conservation concern species recorded, such as song thrush, house sparrow and starlings are likely to benefit from the new habitat creation. It is likely that wetland species will also benefit from the amount of permanent water and SuDS habitat created.

12.240 The appropriate creation and design of woodland, meadow grassland and wetland SuDS habitat could deliver enhanced opportunities for certain bird and bat species, badgers, and also other species present on site and in the wider landscape such as hedgehogs, water voles, amphibians, reptiles and invertebrates.

Future monitoring

12.241 It is recommended that the newly created habitats and the success of bird and bat boxes and the artificial badger sett (if required) is subject to future monitoring following the completion of the development to assess the success of the mitigation strategies detailed within the LEMP.

RESIDUAL ENVIRONMENTAL EFFECTS

12.242 The residual effects are the likely effects occurring following implementation of the design measures, construction phase and operational phase mitigation measures described above.

12.243 The measures proposed are industry-standard and are not novel unproven measures. There is therefore high confidence that such measures will adequately mitigate the likely effects described.

12.244 Subject to the mitigation measures outlined above being implemented, no significant residual effects are anticipated on any designated site, habitat or species.

12.245 It is considered that the enhancement of retained habitats and creation of new habitats could potentially also have a positive (permanent) not significant effect at a Site level on certain species/ecological receptors identified within the Main Order Limits, particularly certain species of birds, bats and invertebrates. Furthermore, the new habitats created would likely provide enhanced opportunities for other species known to be present on site and in the wider landscape, including water voles, hedgehogs and reptiles.

CUMULATIVE AND IN COMBINATION EFFECTS

12.246 Relative to the location and extent of the Proposed Development, the potential cumulative schemes listed in ES Chapter 20 (document reference 6.1.20) are all considered to be spatially divorced from the Proposed Development so as not to exert any tangible cumulative in-combination effect on the IEFs with the Proposed Development.

Cumulative effects assessment,

12.247 Cumulative effects generally occur where there may be simultaneous or prolonged similar effects on the same habitats or species populations as a result of two or more developments of the same type and scale, or where the consideration of other schemes would increase an effect identified.

12.248 There will be anticipated further habitat losses and impacts to species that have been identified as IEFs as a result of the other identified developments and therefore the Cumulative Effect would be significant. However, the BIA calculations (see Appendix 12.2, document reference 6.2.12.2) show that the Proposed Development is capable of providing a 10% net gain in biodiversity, through its onsite and offsite mitigation, and it would be expected that the other developments would be required to do the same.

12.249 Any detailed and reserved matters for the other identified developments would be expected to implement the similar mitigation and enhancement measures, such as the CEMP, EMMP, LEMP and ~~Woodland Access Management Plan~~Woodland Management Plan.

12.250 If these measures were to be followed it is concluded that there would be no significant adverse cumulative effects as a result of the other identified developments.

The potential for cumulative effects

12.251 The potential for cumulative effects, caused by the combination of a number of individual effects on identified receptors, have been considered within the assessment as appropriate, by way of considering the Proposed Development as a whole. The effects considered include dust generation, noise, traffic, hydrological effects and landscape effects. These are considered to be the effects which have the greatest potential for adverse effect and are primarily associated with the construction phase of the project.

12.252 Potential impacts from air quality are considered and assessed within the Air Quality Assessment, which derives its data from a traffic model which includes consented and potential development within the area.

12.253 On that basis, the potential for cumulative effects have been fully assessed.

12.254 A CEMP will be agreed and secured by a relevant DCO and implemented. This will provide a mechanism to minimise the effects of demolition and construction work to reduce the potential effects on all receptors.

CLIMATE CHANGE

12.255 Potential climate change projections have been calculated for the proposals and are detailed within ES Chapter 18 (document reference 6.1.18). In summary, the projections estimate an increase in winter and summer mean and daily mean maximum/minimum temperatures, an increase in winter mean precipitation and a decrease in summer mean precipitation.

12.256 Given that the IEFs within the Main Order Limits are widespread and the location of the Proposed Development is not near the edge of any of their ranges; the projected change in temperatures is not anticipated to result in any significant impacts on the designated site, habitat and species IEFs.

12.257 However, the projected changes in precipitation may have impacts on the aquatic habitats within the Proposed Development, including the marshy grassland, waterbodies and watercourse, and consequently the species associated with them, such as otter, amphibians and invertebrates. It is considered that the generous provision of greenspace within the Proposed Development, which will be managed to promote biodiversity, the large area of varied SuDS/attenuation features proposed throughout the scheme and the large buffer afforded to the watercourse corridor (with additional aquatic features incorporated within it), will provide sufficient resilience to any likely effects of future climate change.

12.258 Furthermore, future monitoring of the new and retained habitats within the Proposed Development, which is to be detailed within the LEMP, as described above in the mitigation section, will allow an opportunity for management prescriptions to be reviewed and amended to reflect any impacts as a result of climate change. This will further safeguard the habitat and species interests over the long term.

SUMMARY AND CONCLUSIONS

12.259 This chapter provides an assessment of the significance and consequences of likely ecological impacts upon identified IEFs arising from the Proposed Development for the HNRFI. It has been prepared by EDP as part of an ES for the Proposed Development.

12.260 Avoidance, mitigation and compensation measures have been prepared as part of a holistic ecology strategy for the Proposed Development to address any likely significant effects that may arise during construction and after completion (operation) of the Proposed Development.

12.261 Further baseline information in support of this chapter and subject to pre- consultation discussions with Statutory Consultees is included within the Ecological Baseline (Appendix 12.1, (document reference 6.2.12.1)) and is referred to throughout the assessment. The approach taken in this assessment is made with reference to the guidelines published in 2018 by the CIEEM.

12.262 The impact assessment has identified that certain actions could result in significant negative impacts on IEFs without mitigation. Inherent avoidance, mitigation and compensation measures and the implementation of an EMMP, and LEMP are considered to ameliorate those significant impacts identified to a residual level where no significant negative effects are likely. Furthermore, such measures can potentially deliver considerable positive effects with respect to biodiversity gain.

12.263 A summary of those activities during the construction and operational phases of the Proposed Development impacting upon identified IEFs, including the proposed mitigation, enhancement and, where necessary, compensation mechanism, should any residual impacts remain, are provided within Table 12.8.

12.264 Based on the impact assessment and consideration of the IEFs, it is concluded that the Proposed Development will conform to the legislative protection afforded to these IEFs and with national, regional and local planning policy requirements.

Table 12.8: Ecology assessment summary.

Ecological Feature	Description of effect	Nature of effect	Significance (pre-mitigation)	Mitigation and enhancement	Residual effect including significance
Construction effects					
Burbage Wood and Aston Firs SSSI	Indirect degradation and damage.	Minor adverse, temporary, reversible, not certain.	Significant (Site to Local level).	CEMP (sensitive construction methods, pollution prevention measures); EMMP (protection of retained habitats).	No significant effect.
Local Wildlife Sites and pLWS as listed in Table 12.5	Indirect degradation and damage.	Minor adverse, temporary, reversible, not certain.	Significant (Site to Local level).	CEMP (sensitive construction methods, pollution prevention measures); EMMP (protection of retained habitats).	No significant effect.
Hedgerow and Mature Tree Network	Direct loss.	Moderate adverse, permanent, irreversible, certain.	Significant (District level).	LEMP (enhancement of retained habitat); and SLS (new habitat creation).	No significant effect.

Ecological Feature	Description of effect	Nature of effect	Significance (pre-mitigation)	Mitigation and enhancement	Residual effect including significance
	Indirect degradation and damage.	Minor adverse, temporary, reversible, not certain.	Not significant (Site level).	CEMP (sensitive construction methods, pollution prevention measures); EMMP (protection of retained habitats).	No significant effect.
Broadleaved Semi-natural and Plantation Woodland	Direct loss (of plantation woodland).	Minor adverse, temporary, reversible, certain.	Not significant (Site level).	LEMP (enhancement of retained habitat); and SLS (new habitat creation).	No significant effect.
	Indirect degradation and damage.	Minor adverse, temporary, reversible, not certain.	Not significant (Site level).	CEMP (sensitive construction methods, pollution prevention measures); EMMP (protection of retained habitats).	No significant effect.

Ecological Feature	Description of effect	Nature of effect	Significance (pre-mitigation)	Mitigation and enhancement	Residual effect including significance
Ponds	Direct loss.	Moderate adverse, permanent, irreversible, certain.	Significant (Local level).	LEMP (enhancement of retained habitat); and SLS (new habitat creation).	No significant effect.
Wet Ditches	Indirect degradation and damage.	Moderate adverse, temporary, reversible, not certain.	Not significant (Site level).	CEMP (sensitive construction methods, pollution prevention measures); EMMP (protection of retained habitats).	No significant effect.
Stream	Diversion of existing alignment.	Major adverse, permanent, irreversible, certain.	Significant (Local level).	CEMP (sensitive construction methods, pollution prevention measures).	No significant effect.
	Severance of connectivity by culverts.	Moderate adverse, permanent, irreversible, certain.	Significant (Local level).	Design of culverts and length of culverts minimised to reduce.	No significant effect.

Ecological Feature	Description of effect	Nature of effect	Significance (pre-mitigation)	Mitigation and enhancement	Residual effect including significance
	Indirect degradation and damage.	Moderate adverse, permanent, irreversible, certain.	Significant (Local level).	CEMP (sensitive construction methods, pollution prevention measures).	No significant effect.
Semi-improved Neutral Grassland	Indirect degradation and damage.	Moderate adverse, permanent, irreversible, certain.	Significant (Local level).	CEMP (sensitive construction methods, pollution prevention measures); EMMP (protection of retained habitats).	No significant effect.
	Direct loss.	Minor adverse, permanent, irreversible, certain.	Significant (Local level).	LEMP (enhancement of retained habitat); and SLS (new habitat creation).	No significant effect.
Winter Bird Assemblage	Habitat loss.	Major adverse effect on declining farmland species, permanent, irreversible, certain.	Significant (Local level).	LEMP (enhancement of retained habitat); and SLS (new habitat creation).	No significant effect.

Ecological Feature	Description of effect	Nature of effect	Significance (pre-mitigation)	Mitigation and enhancement	Residual effect including significance
	Disturbance (noise, visual and human).	Moderate adverse, temporary, reversible, not certain.	Significant (Local level).	CEMP (sensitive construction methods).	No significant effect.
Breeding Bird Assemblage	Habitat loss.	Major adverse effect on declining farmland species, permanent, irreversible, certain.	Significant (District level).	LEMP (enhancement of retained habitat); and SLS (new habitat creation).	No significant effect.
	Direct killing and injuring of nesting birds, young and eggs.	Not significant (based on inherent mitigation – legal compliance).		EMMP (sensitive timing and method of vegetation clearance).	No significant effect.
	Disturbance (noise, visual and human).	Moderate adverse, temporary, reversible, not certain.	Significant (Local level).	CEMP (sensitive construction methods).	No significant effect.

Ecological Feature	Description of effect	Nature of effect	Significance (pre-mitigation)	Mitigation and enhancement	Residual effect including significance
Bat Assemblage	Loss of confirmed roosting habitat (buildings) and potential roosting habitat (trees).	Minor-major adverse, permanent, irreversible, certain-not-certain.	Significant (Local level).	LEMP (enhancement of retained habitat, bat boxes).	No significant effect.
	Direct killing and injuring of roosting bats.	Not significant (based on inherent mitigation – legal compliance).		EMMP and NE Licence (sensitive timing and method of works).	No significant effect.
	Loss of foraging habitat.	Moderate adverse, permanent, irreversible, certain.	Significant (Local level).	LEMP (enhancement of retained habitat); and SLS (new habitat creation).	No significant effect.
	Disturbance (lighting) of foraging habitat.	Moderate adverse, temporary, reversible, not certain.	Significant (Local level).	CEMP (sensitive construction methods).	No significant effect.

Ecological Feature	Description of effect	Nature of effect	Significance (pre-mitigation)	Mitigation and enhancement	Residual effect including significance
Badger	Loss of foraging habitat and potential sett building opportunities.	Moderate adverse, permanent, irreversible, certain.	Not significant (Site level).	LEMP (enhancement of retained habitat); and SLS (new habitat creation).	No significant effect.
	Direct killing or injury and/or disturbance of setts.	Not significant (based on inherent mitigation – legal compliance).		EMMP and NE Licence (sensitive timing and method of works).	No significant effect.
Otter	Loss/fragmentation of foraging habitat.	Minor adverse, permanent, irreversible, certain-not certain.	Significant (Local level).	LEMP (enhancement of retained habitat); and SLS (new habitat creation).	No significant effect.
	Disturbance (noise, visual and human).	Minor adverse, temporary, reversible, not certain.	Significant (Local level).	CEMP (sensitive construction methods); EMMP (protection of retained habitats).	No significant effect.

Ecological Feature	Description of effect	Nature of effect	Significance (pre-mitigation)	Mitigation and enhancement	Residual effect including significance
European Hare	Loss of breeding and foraging habitat (arable land).	Major adverse, permanent, irreversible, certain.	Not significant (Site level).	LEMP (enhancement of retained habitat); and SLS (new habitat creation).	No significant effect.
Common Toad	Loss of breeding and foraging habitat (ponds).	Major adverse, temporary, reversible, certain.	Significant (Local level).	LEMP (enhancement of retained habitat); and SLS (new habitat creation).	No significant effect.
Operational effects					
Burbage Wood and Aston Firs SSSI	Recreational pressure.	Moderate adverse, permanent, irreversible, certain.	Significant (National level).	~~Woodland Access Management Plan~~Woodland Management Plan.	Not significant (Site level).
Billington Rough LWS	Changes in water quality from on-site pollution.	Moderate adverse, temporary - permanent, reversible, uncertain.	Significant (County level).	Surface water drainage system (SuDS features).	No significant effect.

Ecological Feature	Description of effect	Nature of effect	Significance (pre-mitigation)	Mitigation and enhancement	Residual effect including significance
Habitats	Indirect degradation and damage.	Minor adverse, temporary - permanent, reversible, uncertain.	Not significant (Site level).	Surface water drainage system (SuDS features); LEMP (enhancement of retained habitat); and SLS (new habitat creation).	No significant effect.
Breeding and Wintering Bird Assemblage	Disturbance and collision risk.	Minor adverse, temporary - permanent, irreversible, uncertain.	Not significant (Site level).	LEMP (enhancement of retained habitat); and SLS (new habitat creation).	No significant effect
Bat Assemblage	Disturbance (lighting) and collision risk.	Minor adverse, temporary - permanent, irreversible, uncertain.	Significant (Local level).	LEMP (enhancement of retained habitat); SLS (new habitat creation), and sensitive lighting design.	No significant effect.
Badger	Disturbance and collision risk.	Minor adverse, temporary - permanent, irreversible, uncertain.	Not significant (Site level).	LEMP (enhancement of retained habitat); and SLS (new habitat creation).	No significant effect.

Ecological Feature	Description of effect	Nature of effect	Significance (pre-mitigation)	Mitigation and enhancement	Residual effect including significance
Otter	Disturbance and collision risk.	Minor adverse, temporary - permanent, irreversible, uncertain.	Significant (Local level).	LEMP (enhancement of retained habitat); and SLS (new habitat creation).	No significant effect.
	Changes in water quality from on-site pollution.	Minor adverse, temporary - permanent, irreversible, uncertain.	Significant (Local level).	Surface water drainage system (SuDS features).	No significant effect.
Common Toad	Disturbance and collision risk.	Minor adverse, temporary - permanent, irreversible, uncertain.	Significant (Local level).	LEMP (enhancement of retained habitat); and SLS (new habitat creation).	No significant effect.
	Changes in water quality from on-site pollution.	Minor adverse, temporary - permanent, irreversible, uncertain.	Significant (Local level).	Surface water drainage system (SuDS features).	No significant effect.
Cumulative effects					
N/A	None anticipated. As long as other development follows the same assessment and mitigation requirements.				No significant effect.

Ecological Feature	Description of effect	Nature of effect	Significance (pre-mitigation)	Mitigation and enhancement	Residual effect including significance
Impact of climate change					
N/A	Given that the valued habitats and species within the Main Order Limits are widespread and the location of the Proposed Development is not near the edge of any of their ranges; the projected change in temperatures is not anticipated to result in any significant impacts on the designated site, habitat and species.			Maintain and manage green infrastructure.	No significant effect.

Table 12.9: Mitigation implementation.

Mitigation measure	Implementing agent(s)	Legal instrument	Compliance target	Implementation timescale
Implementation of detailed CEMP and EMMP prior to commencement of ground works and site clearance	Developer of relevant Site phase.	DCO requirement.	Accord with the aims of the CEMP and EMMP.	Agreed prior to commencement of development. Implemented prior to and during construction.
Landscape and Ecological Management Plan	Developer of relevant Site phase.	DCO requirement.	Deliver the management prescribed within the LEMP.	Agreed prior to commencement of development. Implemented post-construction in tandem with landscaping proposals.

Mitigation measure	Implementing agent(s)	Legal instrument	Compliance target	Implementation timescale
~~Woodland Access Management Plan~~Woodland Management Plan	Developer of relevant Site phase, or third-party appointee.	DCO requirement.	No detrimental damage to the woodland habitats through recreational pressure.	Agreed prior to commencement of development. Implemented post-construction prior to occupation/ operation of development.