7. Biodiversity

Introduction

7.1 This Chapter reports the outcome of the assessment of likely significant environmental effects arising from the Proposed Development in relation to biodiversity.

7.2 The Chapter describes the technical consultation that has been undertaken during the EIA, the scope of the assessment and assessment methodology, and a summary of the baseline information that has informed the assessment.

7.3 In line with **Chapter 2: Approach to EIA**, the assessment reports on the likely significant environmental effects, the further mitigation measures required to prevent, reduce or offset any significant adverse effects, or further enhance beneficial effects. The conclusions are provided both in terms of the residual effects and whether these are considered significant. The assessment of effects takes into consideration both Primary and Tertiary mitigation (see **Chapter 2: Approach to EIA** for further details) and is informed by the EIA Scoping process (**Appendix 2.1 - 2.2**) and iterative scoping process where applicable.

7.4 This Chapter is intended to be read as part of the wider ES with particular reference to the introductory Chapters (**Chapters 1 – 5**), **Chapter 6: Landscape and Visual,** and **Chapter 9: Assessment of Cumulative Effects**.

7.5 This Chapter is supported by **Figure 7.1: Ecological Parameters Plan**, and **Appendices 7.1 to 7.17**.

Summary of Consultation

7.6 No further consultation was undertaken in addition to EIA Scoping as detailed below.

Scope of the Assessment

7.7 An EIA Scoping Report was submitted to Wiltshire Council on 4th November 2025, as presented as **Appendix 2.1**. The EIA Scoping Opinion was received on 7th January 2026 (**Appendix 2.2**). This section provides confirmation and update of the scope of the assessment presented within this Chapter following submission of the EIA Scoping Report.

Effects Not Considered to be Significant

7.8 Following the EIA Scoping Process, the following effects are not considered significant:

- All effects to Bath and Bradford on Avon Bats Special Area of Conservation (SPA);
- All effects to Spye Park Site of Special Scientific Interest (SSSI);
- Construction effects to Local Wildlife Sites (LWS) (excluding Bristol Avon River LWS); and
- Habitat degradation/change from waterborne and airborne pollution and hydrological changes.

7.9 Further to EIA scoping, it is considered that construction effects to Bristol Avon River LWS can also be scoped out of the assessment. This is due to the distance of the LWS from the Site and the environmental protection measures included in the Construction Environmental Management Plan (CEMP), as detailed in **Chapter 4: The Proposed Development**.

7.10 In addition, the following effects were scoped out for the receptors identified below following further consideration of the likelihood of significant effects, due to the inclusion of additional tertiary mitigation measures and/or the lack of a credible pathway for impacts of a sufficient magnitude to cause significant effects:

- Direct habitat loss, damage/fragmentation and habitat creation/enhancement during construction – otter;
- Killing/injury associated with Site clearance during construction – plants, invertebrates, breeding birds, bats;
- Disturbance associated with noise, lighting and other visual stimuli during construction – common toad, reptiles, hazel dormouse, badger, other mammals;
- Disturbance associated with noise, lighting and other visual stimuli during operation– hazel dormouse, common toad, reptiles, breeding birds;
- Recreation effects during operation – common toad, reptiles, breeding birds, bats, otter, badger, other mammals; and
- Killing/injury associated with vehicle collisions and cat predation during operation – bats, other mammals.

Effects Considered Likely to be Significant

7.11 The following effects (**Table 7.1**) were considered likely to be significant and are reported within this Chapter:

Table 7.1: Effects Considered Likely to be Significant

Likely Significant Effect	Receptors	Applicable Stage
Direct loss and fragmentation of existing habitats and creation of new habitats	Habitats (trees/woodland, hedgerows, watercourses, other habitats and plants), invertebrates, amphibians, reptiles, birds, hazel dormouse, badgers, bats and other mammals.	Construction
Damage and degradation of habitats on Site and adjacent to the Site	Habitats (trees/woodland, hedgerows, watercourses, other habitats and plants).	Construction
Killing/injury associated with Site clearance	Amphibians, reptiles, hazel dormouse, badgers, otter and other mammals.	Construction

Likely Significant Effect	Receptors	Applicable Stage
Disturbance associated with noise, lighting and other visual stimuli	Birds, bats and otter.	Construction
Disturbance associated with habitat fragmentation, noise, lighting and other visual stimuli	Badger, bats, otter, and other mammals.	Operation
Recreation Effects	LWSs within 2km of the Study Area. Habitats (trees/woodland, hedgerows, watercourses, other habitats and plants) on Site and adjacent to the Site. Invertebrates, hazel dormouse	Operation
Killing/injury associated with the Proposed Development, vehicle collisions and cat predation	Amphibians, reptiles, birds, hazel dormouse, badger, otter.	Operation

Assessment Methodology

Legislative Framework, Policy and Guidance

Wildlife Legislation

7.12 The following legislation and policy has informed the assessment of effects within this Chapter, and is detailed further in **Appendix 7.1**:

- Environment Act 2021 (and implementing Regulations);
- Conservation of Habitats and Species Regulations 2017 (as amended);
- Wildlife and Countryside Act 1981 (as amended);
- Countryside and Rights of Way Act 2000;
- Natural Environment and Rural Communities (NERC) Act 2006 (as amended);
- Protection of Badgers Act 1992; and
- Hedgerow Regulations 1997 (as amended).

National Planning Policy

7.13 The National Planning Policy Framework[1] (NPPF; 2024) includes the Government's policy on the protection of biodiversity through the planning system. A summary of the relevant paragraphs of the NPPF is provided in **Appendix 7.2**.

Local Planning Policy

7.14 The key strategic policy of the Wiltshire Core Strategy[2] (WCS) relevant to the ecological assessment of the Proposed Development is Core Policy 50: Biodiversity and Geodiversity.

7.15 The following policies of the Joint Melksham Neighbourhood Plan 2 2020 - 2038[3] (JMNP) are relevant to the ecological assessment of the Proposed Development:

- Policy 12 Green and Blue Infrastructure;
- Policy 13: Biodiversity; and
- Policy 17: Trees and Hedgerows.

7.16 The following additional documents are considered to be relevant to the ecological assessment of the Proposed Development:

- Bats Special Areas of Conservation (SAC) Planning Guidance for Wiltshire[4];
- Trowbridge Bat Mitigation Strategy SPD[5]; and
- Wiltshire Biodiversity Action Plan[6] (BAP).

7.17 Wiltshire Council is currently undertaking a Local Plan Review and published a draft Local Plan for Regulation 19 Consultation in September 2023[7]. Examination of the emerging Local Plan commenced in June 2025. The examination process is currently paused, the latest advice from the Inspectors (dated 27 February 2026) being that "the most efficient and effective course of action for all parties to avoid an overly long examination is for the Council to withdraw the submitted Plan and address [outstanding] matters through the preparation of a new plan under the new local plan-making system."

7.18 All relevant local biodiversity planning policy text is contained in **Appendix 7.3.**

Defining the Study Area

7.19 For the purposes of the desk study, the study areas around the Proposed Development were identified as follows:

- 10 km: European and marine designated sites;
- 5 km: Nationally-designated sites; and
- 2 km: Non-statutory designated sites; previous records of protected and notable species (extended to 4km for bats).

7.20 These study areas are based on professional judgement, informed by knowledge of potential ecological receptors and the likely zone of influence of potential impacts arising from the Proposed Development.

7.21 The ecological surveys undertaken included all of the land within the Site boundary (as shown on the Site Plan; **Appendix E**) and a wider area to the west and southeast, to include adjacent woodland parcels; hereafter referred to as the 'Survey Area'.

7.22 Part of the Site comprising Sandridge Common road and adjacent verges (**Figure 1.1**) was not included within the Survey Area for Phase 2 surveys (although was included within Habitat Condition Assessment surveys to inform the BNG assessment) as works in this area would be within the current highways footprint. This is not considered to compromise the adequacy of this assessment, which covers all ecological receptors potentially affected by the Proposed Development.

7.23 The Survey Area was consistent throughout the surveys, with the only variation arising within the bat activity survey, which included an additional three fields to the west of the Site; refer to **Appendix 7.14**.

7.24 Habitat descriptions within the baseline section of this Chapter refer to the habitats within the Site boundary only, while species descriptions refer to the Site and relevant immediately adjacent areas within the Survey Area.

Background Studies to Inform the ES / Establishing the Baseline

Desk Study

7.25 Biodiversity information was requested for a study area of 2km radius around the Site boundary (extended to 4km for bats) from Wiltshire and Swindon Biological Records Centre (WSBRC) in November 2023 and updated in November 2025. Information requested included the location and details of the following:

- Designated sites of nature conservation importance (statutory and non-statutory; extended to 10km for European statutory designated sites and 5km for other statutory sites using the Defra MAGIC website[8]); and
- Previous records of protected and/or notable species, including Priority Species (Species of Principal Importance for Conservation in England listed in accordance with Section 41 of the NERC Act 2006) and Wiltshire BAP Priority Species.

7.26 Information was also obtained from the following websites (November 2023 and November 2025):

- https://magic.defra.gov.uk[9] – Information on protected sites;
- http://jncc.defra.gov.uk[10] – information on protected sites, Priority Habitats and Species; and
- https://www.gov.uk/government/organisations/natural-england[11] – information on protected sites and standing advice.

Surveys

7.27 An Extended Phase 1 Habitat survey was undertaken in June 2018, and updated in July 2019, May 2021 and May 2024. The survey followed guidelines published by JNCC[12] and the Institute of Environmental Assessment[13] and identified the main habitat types on the Site and the presence/potential presence of protected and notable species. The results of the survey were detailed on a Phase 1 Habitat plan, with target notes used to identify specific features of ecological interest; refer to **Appendix 7.4.** A botanical species list was recorded, although no attempt was made to record every plant species on the Site; refer to **Appendix 7.5.**

7.28 The desk study and Extended Phase 1 Habitat survey identified the potential for protected and notable species to occur within the Site and wider zone of influence. Further (Phase 2) surveys were therefore undertaken to determine if such species were present and (where possible) to assess their population status and the nature and extent of use of the Site. A summary of these surveys is provided in **Table 7.2** below. Full details of survey methods and results are contained in **Appendices 7.6 – 7.16**. All surveys were undertaken following best practice methods.

7.29 All ecological surveys and assessments were undertaken by appropriately qualified ecologists in accordance with current Chartered Institute of Ecology and Environmental Management (CIEEM) Ecological Impact Assessment guidance[14] and Defra Biodiversity Metric technical guidance[15].

Table 7.2: Summary of Phase 2 Ecological Surveys

Survey	Overview	Date
Hedgerow survey (**Appendix 7.6**)	Assessment of hedgerows according to Hedgerow Regulations 1997 criteria.	May 2021 and May 2025
Great crested newt survey (**Appendix 7.7**)	Habitat Suitability Index (HSI) assessment and eDNA survey of onsite ponds and off-Site ponds identified within 250m of the Site (sampled in accordance with Biggs et al., 2014[16]).	April 2021 and May 2024
Reptile survey (**Appendix 7.8**)	Deployment and seven checks of artificial refugia in accordance with standard methodology (Froglife, 1999[17]).	April – June 2021 and April – May 2025
Breeding bird survey (**Appendix 7.9**)	Five visits following an adapted Common Bird Census (CBC) methodology (Gilbert et al., 1998[18]) to record all species and estimate number of breeding pairs/territories.	April – June 2025
Barn owl survey (**Appendix 7.10**)	Three-stage barn owl survey undertaken in accordance with 'Barn owl survey methodology and techniques for use in Ecological Assessment' (Shawyer, 2011[19]).	April 2021 and May – July 2024
Hazel dormouse survey (**Appendix 7.11**)	Deployment and six checks of dormouse nesting tubes within hedgerows following standard methodology (Bright et al., 2006[20]).	April – October 2021
Badger survey (**Appendix 7.12**)	Search of the Site and the immediate surrounding area to record signs of badger activity, including setts, latrines, pathways and feeding signs in accordance with Harris et al. (1999)[21].	June 2025
Bat roost survey (**Appendix 7.13**)	Preliminary roost assessment of all trees within the Site and further aerial assessment and/or emergence/re-entry surveys of trees identified as	April 2021, May 2024 and

Survey	Overview	Date
	potentially suitable for roosting bats in accordance with Bat Conservation Trust (BCT) guidelines (2016[22] & 2023[23]).	May – July 2025
Bat activity survey (**Appendix 7.14**)	Three night-time Bat Walkover (NBW) surveys and deployment of seven static bat detectors for at least five nights per month to determine the importance of the Site for commuting and foraging bats, and establish species abundance and diversity. Undertaken in accordance with BCT Guidelines (2023)[24].	May - October 2024
Otter and water vole survey (**Appendix 7.15**)	Search for signs of otter and water vole activity following standard survey methodology (Chanin, 2003[25] and Dean et al., 2016[26]).	April and August 2021 May and August 2024
UKHab survey and Habitat Condition Assessment (HCA) (**Appendix 7.16**)	HCA of all habitats onsite, following Statutory Biodiversity Metric Methodology (Defra, 2025a)[27] and UKHab (v2.0) UK Habitat Classification User Manual Methods (UKHab, 2023)[28].	June 2024

Assessment Process

7.30 The assessment has been undertaken in broad accordance with Guidelines for Ecological Impact Assessment in the UK and Ireland published by CIEEM[29] and BS42020: Biodiversity: Code of Practice for Planning and Development[30]. The baseline situation is considered before the likely ecological effects of the Proposed Development are identified during its construction and operational phases.

Reporting of the Environmental Effect and Significance Criteria

7.31 The assessment of likely significant environmental effects as a result of the Proposed Development has taken into account the construction and operational stage. The following sections define the approach adopted within the assessment for the determination of sensitivity (or value/importance), magnitude of change (or impact), the level of effect and significance.

Determining Sensitivity of Receptor

7.32 The sensitivity of affected receptors has been considered on a scale of **high**, **medium**, **low** or **negligible**, which are based on CIEEM criteria and the format set out in **Table 7.3.**

Table 7.3: Example Definitions of Sensitivity

Sensitivity	Example definition
High	International importance - European sites (SACs, SPAs), Ramsar Sites or other sites meeting criteria for international designation; sites supporting populations of internationally important species or supplying critical elements of their habitat requirements. National or Regional importance - nationally designated sites (SSSIs, NNRs, MCZs) or other sites meeting criteria for national designation; sites containing viable areas of threatened habitat identified as Priority Habitat; irreplaceable habitats (e.g. ancient woodland); sites supporting nationally important populations of protected/notable species or supplying critical elements of their habitat requirements.
Medium	County or district importance - sites or populations meeting criteria for county or district designations (e.g., County Wildlife Sites, Sites of Nature Conservation Interest, Local Nature Reserves) but not meeting SSSI criteria; sites supporting viable populations of protected/notable species or supplying critical elements of their habitat requirements.
Low	Parish importance - undesignated sites, areas of habitat or populations of species that are considered to appreciably enrich the natural heritage resource within the context of the parish or metropolitan area.
Negligible	Sub-parish importance - ecological resource not meeting any of the above criteria, or of importance within the context of the assessment site only.

Determining the Magnitude of Change

7.33 The magnitude of change has been considered as the change experienced from the current baseline conditions at the sensitive receptor and has been considered on a scale of **large**, **medium**, **small** or **negligible**, as set out in **Table 7.4.**

Table 7.4: Example Definitions of Magnitude

Extent of change	Example definition
Large	Any long-term change to an ecological receptor of high sensitivity. A major change to one or more internationally or nationally important populations of protected/notable species, a change sufficient to eradicate one or more of these receptors, or have a major effect on the integrity or functionality of an ecosystem.
Medium	Any long-term change to an ecological receptor of medium sensitivity or a temporary change on an ecological receptor of high sensitivity. A marked change in the number of one or more protected/notable species, or the composition or extent of communities, whilst not

Extent of change	Example definition
	leading to eradication or major effects or functionality of an ecosystem.
Small	Any change to an ecological receptor of low sensitivity e.g., permanent loss of a significant area of undesignated habitat considered to be of local importance, or a temporary change on an ecological receptor of medium sensitivity, e.g., short-term impacts to a SNCI. Some change in protected/notable species numbers or extent of a community, but without any marked effects on the integrity or functioning of an ecosystem.
Negligible	No loss or alteration of characteristics, features or elements; no observable impact.

Determining the Level of Effect

7.34 The level of effect has been informed by the magnitude of change due to the Proposed Development and the evaluation of the sensitivity of the affected receptor. The level of effect has been determined using professional judgement and **Table 7.5** has been a tool which has assisted with this process.

7.35 Whilst **Table 7.5** provides ranges, the level of effect is confirmed as a single level and not a range, informed by professional judgement. For each effect, it has been concluded whether the effect is '*beneficial*' or '*adverse*'.

Table 7.5: Matrix to Support Determining the Level of Effect

		Sensitivity (or value / importance)			
		High	**Medium**	**Low**	**Negligible**
Magnitude of Change	**Large**	Major	Moderate to Major	Minor to Moderate	Negligible
	Medium	Moderate to Major	Moderate	Minor	Negligible
	Small	Minor to Moderate	Minor	Negligible to Minor	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible

7.36 The following terms have been used to define the level of the effects identified and these can be 'beneficial' or 'adverse':

- **Major effect**: where the Proposed Development is likely to cause a considerable change from the baseline conditions and the receptor has limited adaptability, tolerance or recoverability or is of the highest sensitivity;

- **Moderate effect**: where the Proposed Development is likely to cause either a considerable change from the baseline conditions at a receptor which has a degree of adaptability, tolerance or recoverability or a less than considerable change at a receptor that has limited adaptability, tolerance or recoverability;

- **Minor effect**: where the Proposed Development is likely to cause a small, but noticeable change from the baseline conditions on a receptor which has limited adaptability, tolerance or recoverability or is of the highest sensitivity; or where the Proposed Development is likely to cause a considerable change from the baseline conditions at a receptor which can adapt, is tolerant of the change or/and can recover from the change; and

- **Negligible**: where the Proposed Development is unlikely to cause a noticeable change at a receptor, despite its level of sensitivity or there is a considerable change at a receptor which is not considered sensitive to a change.

7.37 The duration of the effect has been assessed as either '**short-term**', '**medium-term**' or '**long-term**'. Short-term is considered to be up to 1 year, medium-term is considered to be between 1 and 10 years and long-term is considered to be greater than 10 years.

Determining Significance

7.38 For each effect, a statement has been made as to whether the level of effect is '**Significant**' or '**Not Significant**'. This determination has been based on professional judgement and/or relevant guidance / legislation where applicable.

7.39 Significance has only been concluded for residual effects (i.e. following the identification of secondary mitigation).

Baseline Conditions

Designated Sites of Nature Conservation Importance

7.40 There are no statutory or non-statutory designated sites of nature conservation importance within or adjacent to the Site. One European designated site (Bath and Bradford-on-Avon Bats SAC) is located within 10km of the Site and one nationally designated site (Spye Park Site of SSSI) is located within 5km of the Site, further details of which are provided in **Appendix 7.17**. These sites have been scoped out of the ES, as detailed in the EIA Scoping Report (**Appendix 2.1**), and are therefore not discussed further within this Chapter.

7.41 Ten non-statutory sites are located within 2 km of the Site; refer to **Table 7.6** and **Appendix 7.17**. The closest of these is Eighteen Acre Plantation LWS, located 0.3 km to the east of the Site and designated for woodland habitats.

Table 7.6: Designated Sites of Nature Conservation Importance within Study Area

Site Name	Designation	Description	Distance / Direction from Site
European designated sites within 10 km			
Bath and Bradford-on-Avon Bats	SAC	Designated for the presence of greater horseshoe bat *Rhinolophus ferrumequinum* and Bechstein's bat *Myotis bechsteinii*. Lesser horseshoe bat *Rhinolophus hipposideros* is also a qualifying feature but not the primary reason for designation.	9.5 km northwest
National and local designated sites within 5 km			
Spye Park	SSSI	Designated for breeding bird assemblages, assemblages of lichen, lowland mixed deciduous woodland and wet woodland	2.1 km northeast
Non-statutory designated sites within 2km			
Eighteen Acre Plantation	LWS	Plantation woodland.	0.3 km east
Morass Wood	LWS	Former coppice woodland with areas of wet flush.	0.8 km east
Hanging Wood	LWS	Mature poplar plantation on a wet ancient site with Hazel understorey and characteristic ground flora throughout.	1.0 km northeast
Prickly Sevens Meadow	LWS	Unimproved species-rich hay meadow	1.1 km southeast
Basin Covert	LWS	Ancient woodland site with areas of conifer plantation surrounded by a perimeter of semi-natural broadleaved woodland.	1.4 km northeast
Bristol Avon River	LWS	One of the main river systems draining north-west Wiltshire.	1.9 km west
Hack Farm Meadow	LWS	Species-rich neutral grassland.	1.5 km northeast

Site Name	Designation	Description	Distance / Direction from Site
Hill Planting	LWS	Plantation woodland with mature oak and ash. Understorey of hazel coppice, hawthorn and elm.	1.7 km northeast
Southview Farm Meadow 2	LWS	Neutral meadow with semi-improved mesotrophic grassland and large in-field Oaks.	1.7 km northeast
Maple Wood	LWS	Ancient semi-natural broadleaved woodland.	1.9 km east

Habitats within the Site

7.42 Habitat descriptions are provided below; refer also to **Appendix 7.4** for the Phase 1 Habitat Plan and the accompanying Target Notes [TN] and photographs. Plant species are referred to using their English names; **Appendix 7.5** lists them including their scientific names, nomenclature following Stace (2010)[31].

7.43 The majority of the Site comprised poor semi-improved grassland and arable fields bordered by a network of hedgerows and ditches; refer to **Appendix 7.4.** A watercourse was present in the southwest of the Site (Clackers Brook Tributary), which flowed from east to west.

Ditches

7.44 Several wet and dry ditches were present within the Site [TNs 2 & 6]; all were associated with hedgerows or woodland edge. The water levels within the ditches varied across the Site, with many dry for the majority of the year. Dry ditches contained very little aquatic vegetation, with only occasional fool's watercress recorded. Wet ditches contained water up to 30cm depth. Aquatic vegetation within the wet ditches included hemlock water-dropwort, fool's watercress, lesser spearwort, yellow iris and willowherb species.

Hedgerows

7.45 A range of hedgerow types was identified within the Site and formed field boundaries. These hedgerows were dominated by blackthorn, hawthorn and elm, with frequent to occasional rose sp., field maple, pedunculate oak, elder, wild privet, goat willow, dogwood, spindle, and ash. The majority of hedgerows were approximately 1.5 - 2 m high and 1 - 1.5 m wide, and subject to regular management through flailing.

7.46 The results of the hedgerow surveys are provided in **Appendix 7.6**. All 29 of the qualifying hedgerows within the Site were determined to be 'Important' under the ecological criteria of the Hedgerow Regulations 1997 (as amended); these hedgerows qualified on the basis of the numbers of botanical indicator species present and/or the presence of protected species (hazel dormouse; **Appendix 7.11**). Hedgerows are a Priority Habitat and Wiltshire BAP Habitat.

Improved grassland

7.47 Two fields of improved grassland managed for silage were present in the central portion of the Site. These were dominated by perennial rye grass and white clover, with occasional creeping buttercup, creeping thistle and broadleaved dock.

Poor semi-improved grassland

7.48 This was the dominant habitat type within the Site, and comprised six fields managed predominantly for hay/silage and grazed by cattle. Species present included abundant perennial ryegrass and meadow foxtail, frequent Yorkshire fog, meadow buttercup and rough meadow grass, occasional curled dock, creeping buttercup, broadleaved dock, common mouse-ear, sweet vernal grass, white clover, annual meadow-grass, and dandelion, and rare reed canary grass, common vetch and marsh foxtail. An evaluation of this habitat was undertaken against Priority Habitat 'Lowland meadow' classification criteria; the grassland did not meet the criteria for classification as Priority Habitat due to limited botanical species diversity.

Running water

7.49 A single watercourse (Clackers Brook Tributary) was located within the southwestern portion of the Site, flowing from east to west. This watercourse was slow flowing with a soft, muddy substrate, approximately 1 m wide and < 0.3 m depth, with shallow earth banks. 'Rivers and streams' are a UK Priority Habitat, and 'Rivers, Streams and Associated Habitats' are a Wiltshire BAP Habitat.

Scattered broadleaved trees

7.50 Mature and semi-mature broadleaved trees were present within hedgerows and along field boundaries throughout the Site, including three veteran oak trees (refer also to Tree Constraints Plan; EDP drawing reference edp9278_d001a; Trees 15, 22 and 61 in **Arboricultural Impact Assessment**). Species included pedunculate oak, ash, English elm and field maple. Four mature pedunculate oaks also formed a line in middle of a grassland field in the north of the Site [TN 7].

Surrounding habitats

7.51 Two parcels of semi-natural broadleaved woodland occurred immediately adjacent to the Site boundary, to the west and southeast. Lowland Mixed Deciduous Woodland' is a UK Priority Habitat and 'Woodland' is a Wiltshire BAP Habitat.

7.52 The smaller parcel of woodland, located to the west [TN1] had a variably dense mature canopy with frequent ash, sycamore and pedunculate oak. The understorey was dominated by hawthorn and sycamore with occasional hazel, bramble, blackthorn and elder. Ground flora was generally sparse with frequent to locally abundant ivy and ground ivy, occasional wood sedge, wood dock and wood false brome.

7.53 A larger parcel of woodland adjacent to the southeast [TN5]; had a mature canopy dominated by pedunculate oak and ash. The understorey contained frequent to abundant hazel, hawthorn and sycamore with occasional elm, blackthorn and field maple. Ground flora comprised frequent ivy, nettle, bramble and cleavers, with greater botanical diversity found in woodland rides where there was occasional to frequent wood avens, wood sedge, wood dock, enchanter's nightshade and cow parsley.

7.54 A pond, approximately circular and measuring 5m diameter, was present immediately adjacent to the southwestern Site boundary [TN 4]. This was shallow (approximately 10cm deep at the time of survey) and heavily shaded by adjacent hedgerow vegetation. No emergent aquatic vegetation was recorded. Ponds are a UK Priority Habitat and 'Standing open water' is a Wiltshire BAP Habitat.

7.55 Additional habitats immediately adjacent to the Site on all sides comprised pastoral and arable land, hedgerows, and occasional parcels of woodland and waterbodies. Approximately 350m to the west of the Site boundary was residential development on the outskirts of Melksham. A gravelled access track bounded the eastern Site boundary, beyond which was a large solar farm.

Protected and Notable Species

Plants

Desk study

7.56 Numerous notable plant species were identified within the 2 km Study Area. These included four species recorded adjacent to the Site; sweet-briar (County Notable), English bluebell (legally protected from sale only), strawberry clover and stinking chamomile (both Vulnerable). Other species included red hemp-nettle (Nationally Scarce, Priority Species), tubular water-dropwort (Priority Species), harsh downy-rose (County Notable) and fly honeysuckle (Nationally Rare).

Site survey

7.57 No further notable plants were recorded within the Site and the presence of such species was considered unlikely.

Invasive plants

Desk study

7.58 No records of invasive plant species were identified within the 2 km Study Area.

Site survey

7.59 No invasive plant species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) were recorded within the Site during surveys undertaken in 2021, 2024 or 2025.

Invertebrates

Desk study

7.60 A number of invertebrates that are Priority Species and Wiltshire BAP Priority Species have been recorded within the 2 km Study Area, including the butterflies grizzled skipper, wall, white admiral and white-letter hairstreak, and various moths including garden tiger. Numerous records exist for scarce chaser, a near-threatened dragonfly and Wiltshire BAP Priority Species. There is also one record for marsh fritillary butterfly, a legally-protected, Priority Species and Wiltshire BAP Priority Species, from a withheld location, although the record is over 40 years old. There is one record of white-clawed crayfish, a legally-protected Priority Species and Wiltshire BAP Priority Species, from a location approximately 1.3 km north-east of the Site, although the record is over 20 years old.

Site survey

7.61 The Site provided suitable habitat for a range of invertebrates, potentially including scarce chaser along wet ditches / stream and notable species of butterfly and moth.

7.62 Habitats within the Site were considered to be unsuitable for marsh fritillary due to the lack of suitable damp, heathy or chalk grassland.

7.63 The ditches and watercourse onsite were considered unsuitable for white-clawed crayfish due to the lack of water in the ditches for much of the year, the soft substrate and lack of suitable refuges.

Amphibians

Desk study

7.64 Three species of amphibian were identified within the 2 km Study Area; these were: great crested newt (GCN), a legally-protected Priority Species and Wiltshire BAP Priority Species; common frog and common toad (Priority Species).

7.65 Numerous records of GCN were identified within the 2 km Study Area, with the most recent and closest record from 2022, approximately 0.66 km south of the Site. A Natural England GCN Mitigation Licence was also identified approximately 0.8 km south-west of the Site.

Site survey

7.66 In addition to the three waterbodies identified within the Site (comprising three 'ponded' sections of wet ditch), a study of aerial photography and OS maps revealed a further five waterbodies within 250m of the Site. These waterbodies were surveyed through a HSI survey and eDNA water-sample survey (where appropriate); refer to **Appendix 7.7**. eDNA analysis of water samples undertaken in May 2024 was negative for the presence of GCN. Given the negative eDNA results, the presence of GCN within the Site was considered very unlikely.

7.67 The Site provided suitable terrestrial and breeding habitat for widespread amphibian species including common toad (Priority Species); hedgerows and scrub, as well as log piles in the north of the Site [TN8] also provided suitable hibernation habitat.

Reptiles

Desk study

7.68 Three species of reptile; slow-worm, grass snake (both Wiltshire BAP Priority Species) and common lizard (all legally protected, Priority Species) have all been recorded within the 2 km Study Area.

Site survey

7.69 The reptile surveys recorded a maximum count of one grass snake, within the north-east of the Site. This meets the Froglife criteria for a 'low' population of grass snake[32]. No other species of reptile were recorded; refer to **Appendix 7.8**.

7.70 Suitable reptile habitat was restricted to the field margins, with the majority of the tightly grazed grassland habitat within the Site unsuitable for reptiles. The hedgerows, scrub, and log piles in the north of the Site [TN8] provided suitable reptile hibernation habitat.

Birds

Desk study

7.71 Notable bird species recorded in the 2 km Study Area, which are relevant to the habitats within the Site, are listed in **Table A7.9.1, Appendix 7.9**. All wild birds are legally protected and many are also Priority Species and/or are 'Red' or 'Amber' Species of Conservation Concern. There are 12 'Schedule 1' Species within 2km of the Site, Schedule 1 species receive additional legal protection against disturbance whilst breeding; refer to **Appendix 7.1**

Site survey

7.72 A total of 45 species were recorded during the course of the survey, of which 34 species were confirmed, probably or possibly breeding within the Survey Area; refer to **Appendix 7.9**. These included:

- Yellowhammer, linnet and skylark, which possibly bred. These are Priority Species and Red-listed Birds of Conservation Concern;
- Dunnock and song thrush, which probably bred. These are Amber-listed Birds of Conservation Concern and Priority Species;
- Greenfinch, which probably bred, and mistle thrush, which possibly bred. These are Red-listed Birds of Conservation Concern;
- Rook, which was confirmed breeding, woodpigeon, wren and whitethroat, which probably bred, and stock dove, which possibly bred. These are Amber-listed Birds of Conservation Concern; and
- Herring gull, mallard, meadow pipit, swift, willow warbler, house martin and red kite, which are all Red or Amber Birds of Conservation Concern, Priority Species and/or Schedule 1; however, none of these species were considered to be breeding within the Site.

7.73 Habitats on-Site that provided the greatest value for breeding birds were hedgerows and mature trees. Grassland on Site also provided some limited potential nesting habitat for skylark, although evidence of breeding was not recorded.

7.74 No barn owls were recorded during the breeding bird surveys; however, barn owls were recorded incidentally within the Site during bat activity surveys in 2021 and 2024; refer to **Appendix 7.10.** Barn owl pellets were recorded beneath a mature oak tree in the north of the Site, which contained a cavity suitable for nesting and/or roosting barn owl. There were no clear signs of previous nesting activity within the crevice; however, the presence of a barn owl roost within this tree is assumed. Seven other trees within the Site contained suitable nesting/roosting features for barn owl; all such trees that would be directly impacted by the development proposals were subject to bat emergence surveys/aerial inspections (**Appendix 7.13**) and no evidence of barn owl was recorded.

7.75 Habitats within the Site comprised grassland, managed primarily for grazing and/or silage/hay cropping, with a short, homogenous sward, which falls within the 'Type 2 barn owl habitat category' (Shawyer, 2011). Type 2 habitats are described as offering "*sub-optimal habitat for field voles and are of intermediate and often transient value to barn owls*". Nonetheless, barn owl is highly likely to forage within the Site, particularly in areas where

silage/hay cropping is not as frequent and taller, more tussocky sward temporarily establishes.

Hazel dormouse

Desk study

7.76 There is one record of hazel dormouse from the 2 km Study Area; this record is from 2024 and is located approximately 1.1 km to the southwest. Hazel dormouse is legally protected and is a Priority Species and Wiltshire BAP Priority Species; refer to **Appendix 7.1.**

Site survey

7.77 Hedgerows within the Site provided suitable habitat for hazel dormouse. Evidence of hazel dormouse was recorded in hedgerows in the central and southern parts of the Site during the 2021 nest tube surveys; refer to **Appendix 7.11**. This species is, therefore, considered to be present within hedgerows throughout the Site.

Badger

Desk study

7.78 Numerous records of badgers and their setts were identified within the 2 km Study Area. Badgers and their setts are legally protected; refer to **Appendix 7.1** for species legislation.

Site survey

7.79 Three outlier badger setts were identified within the Site; refer to **Appendix 7.12**. These setts all comprised a single entrance hole; two setts were considered to be active and one was inactive. Other evidence of badger activity was noted, including well-worn paths and a latrine along field margins.

Bats

Desk study

7.80 No records of bats were identified from within the Site. Bat records from within the wider 4 km Study Area included roosts of barbastelle, brown long-eared, common pipistrelle, Daubenton's, greater horseshoe, Leisler's, lesser horseshoe, *Myotis*, Nathusius' pipistrelle, Natterer's, noctule, serotine, soprano pipistrelle and whiskered/Brandt's bat.

7.81 There are records of barbastelle, brown long-eared, common pipistrelle, Daubenton's, greater horseshoe, lesser horseshoe, Myotis, serotine, soprano pipistrelle, Natterer's and whiskered/Brandt's bat roosts within a 1 km radius of the Site. However, the exact locations are withheld by WSBRC.

7.82 A Natural England Bat Mitigation Licence for a brown long-eared bat roost (non-maternity; 2015-13904-EPS-MIT) was identified on the northern boundary of the Site. The precise location of this roost is unknown, as records were not submitted to WSBRC (WSBRC, pers. comm. 28/11/2023). Another Natural England Bat Mitigation Licence, for brown long-eared, common pipistrelle, serotine, soprano pipistrelle and whiskered bat (including maternity; 2019-42098-EPS-MIT), was identified approximately 1 km north-east of the Site.

7.83 All bats are legally protected and some are Priority Species and Wiltshire BAP Species (refer to **Appendix 7.1**).

Site Survey – Bat Roost

7.84 Bat roost surveys of trees within the Site were undertaken in 2021, 2023 and 2025; refer to **Appendix 7.13**. The following bat roosts were identified within the Site:

- Tree 21; one common pipistrelle bat was recorded emerging from a bat box mounted on this maple tree on 27/07/23, and an unidentified bat, assumed to be a pipistrelle species, was recorded emerging from the same bat box on 04/03/23. Despite no bat emergences being recorded during the update 2025 surveys, this bat box is considered to be a non-breeding day roost for low numbers of pipistrelle bats.

- Tree 24; a single Natterer's bat was recorded roosting within a cavity in this oak tree on 09/04/25 during an aerial inspection. This feature is considered to be a non-breeding day roost for low numbers of Natterers' bat.

- Tree 39; a single Natterer's bat was recorded roosting within a cavity in this oak tree during aerial inspections on 09/04/25 and 16/06/25. This feature is considered to be a non-breeding day roost for low numbers of Natterers' bat.

Site Survey – Activity Survey

7.85 At least seven species of bat were identified during the Night-time Bat Walkover surveys of the Survey Area, with the majority of calls from common pipistrelle and soprano pipistrelle bats. These are both common and widespread bat species. The following key observations were recorded during the surveys (refer to **Appendix 7.14**):

- Common and soprano pipistrelle bats were recorded commuting and foraging along the majority of hedgerows within the Site boundary, with the highest concentration of these species recorded around the watercourse corridor southwest of Site.

- Nyctalus/Eptesicus bats were observed commuting across the Site, predominately in September.

- A small number of long-eared bats (five registrations) were recorded in June and July. These registrations were located in the west of the Site predominately adjacent to the watercourse, indicating that this feature provides an occasional commuting route for individual long-eared bats at this time of year. A single registration was recorded in September along the western boundary of the main portion of the Site.

- Myotis bats were recorded commuting and foraging along boundary hedgerows across the Site. In July, foraging activity was concentrated in the north of the Site, adjacent to Blackmore Farm.

- A small number of lesser horseshoe bat calls (seven registrations) was recorded in July and September; these calls were scattered across the Site along boundary hedgerows.

7.86 At least ten species of bat were identified during the static detector surveys, with a cumulative total of 87,933 registrations recorded across seven static detector locations from May - October; refer to **Appendix 7.14**. Common pipistrelle accounted for the highest number of registrations within the Site (72.19%), followed by soprano pipistrelle (14%), *Myotis* species (5.84%) *Nyctalus/Eptesicus* species (1.7%) and Nyctalus species (1.65%). Other species recorded but accounting for less than one percent of the registrations included

barbastelle, noctule, long-eared bat, lesser horseshoe bat, greater horseshoe bat, serotine and Nathusius' pipistrelle.

7.87 Areas of higher bat activity recorded during the surveys were generally within the central and southern parts of the Site. Recorded activity at these locations was dominated by common pipistrelle, soprano pipistrelle and *Myotis* species, which accounted for >82% of registrations. Relatively lower levels of bat activity were recorded in the northern and western areas of the Site.

7.88 Light-averse bat species recorded within the Site included *Myotis* species, long-eared bat, barbastelle, lesser horseshoe bat and greater horseshoe bat.

7.89 Long-eared bat activity was recorded at all static detector positions, with a total of 297 registrations. The highest levels of activity of this species were recorded adjacent to off-Site woodland in the south of the Site, and along the eastern Site boundary. The earliest long-eared bat registration recorded was approximately 35 minutes after sunset, which suggests this bat was associated with a nearby roost. The closest known brown long-eared roost to the Site is approximately 0.8 km south-west.

7.90 Barbastelle bats were recorded at all static detector locations with a total of 1,155 registrations recorded across the Site. Barbastelle activity was highest adjacent to off-Site woodland in the south of the Site.

7.91 *Myotis* species were recorded at all static detector positions, with a total of 5,133 registrations recorded. *Myotis* activity was highest adjacent to off-Site woodland in the south of the Site, and adjacent to the western and southwestern Site boundaries. An increase in *Myotis* activity recorded in August could be associated with juvenile dispersal from a nearby roost. In addition to the two tree roosts for Natterers' bat identified on-Site, the closest known *Myotis* bat roost was a Natterer's roost within 1km of the Site (exact location unknown). Daubenton's and whiskered bats have also been recorded within 4 km of the Site.

7.92 Greater horseshoe bat was recorded in low numbers (six or fewer registrations) at all static detector positions. Foraging activity, as defined by Miller (2001)[33], was not recorded within the Site.

7.93 Lesser horseshoe bats were recorded at all static detector locations, with a total of 1,071 registrations recorded across the Site. The highest levels of activity were recorded adjacent to off-Site woodland in the south of the Site and along the eastern Site boundary. The temporal activity patterns of lesser horseshoe bat registrations across the survey period (May – October) are generally indicative of commuting and occasional foraging within the Site. Foraging contacts, as defined by Miller (2001)[34], were also recorded at all positions in the Survey Area throughout the survey season.

Otter, Water Vole and Beaver

Desk study

7.94 There are numerous previous records of otter and water vole from the 2 km Study Area, including records from Clackers Brook Tributary. Otter and water vole are legally-protected Priority Species and Wiltshire BAP Priority Species.

7.95 There are three previous records of beaver from the 2 km Study Area; these records are all from 2022 from the River Avon, located approximately 1.9 km to the northwest. Beaver is a legally protected species.

Site survey

7.96 No evidence of otter was recorded during surveys but periodic use of the watercourse (Clackers Brook Tributary) within the Site for foraging/commuting was considered to be likely; refer to **Appendix 7.15.**

7.97 No evidence of water vole was recorded within the Site; refer to **Appendix 7.15.** Water vole populations expand and contract regularly, influencing local distribution and extent. Clackers Brook Tributary provided suitable habitat for the species, so it is possible that it could recolonise the reach within the Site in the future. However, it is not considered to be present as part of the current baseline.

7.98 No evidence of beaver (including lodges, dams or feeding signs) was recorded along the watercourse within the Site during surveys undertaken for otter and water vole. The watercourse onsite is narrow (approximately 1 m wide) and shallow (< 0.3 m deep). Given the absence of field signs and the limited connectivity to known beaver territories in the wider area, it is considered highly unlikely that beaver are present or that the Site is of functional importance to the species.

Other Mammals

Desk study

7.99 There are records from the Study Area of brown hare, harvest mouse and hedgehog (all Priority Species and Wiltshire BAP Priority Species). Water shrew was also recorded within the Study Area (County Notable Species and Wiltshire BAP Priority Species).

Site survey

7.100 The Site provided suitable habitat for hedgehog, harvest mouse and water shrew (although limited in extent with respect to harvest mouse and water shrew), which are assumed to be present. The presence of brown hare within the Site was confirmed (incidental records during Phase 2 surveys; recorded on numerous occasions within poor semi-improved grassland habitats).

Table 7.7: Evaluation of important ecological features

Ecological feature	Ecological importance	Reason for valuation	EIA receptor sensitivity
Designated sites of nature conservation importance			
LWS within 2 km of Site	District	Value reflects designation.	Medium
Habitats within the Site			
Ditches	Sub-Parish	Common and widespread habitat.	Low

Ecological feature	Ecological importance	Reason for valuation	EIA receptor sensitivity
Hedgerows	Parish	Hedgerows act as wildlife corridors through the landscape and are a Priority Habitat and Wiltshire BAP Priority Habitat.	Low
Improved grassland	Sub-Parish	Common and widespread habitat.	Low
Poor semi-improved grassland	Sub-Parish	Common and widespread habitat.	Low
Running water (Clackers Brook tributary)	District	Watercourse provided suitable habitat for a range of species including otter. 'Rivers and streams' is a Priority Habitat and 'Rivers, Streams and Associated Habitats' are a Wiltshire BAP Habitat.	Medium
Scattered broadleaved trees (excluding veteran trees)	Sub-Parish	Common, widespread habitat. Predominantly located within hedgerows, which are a Priority Habitat and Wiltshire BAP habitat..	Low
Veteran trees	National	Three veteran trees recorded within the Site; veteran trees are an 'irreplaceable habitat' under the NPPF	High
Adjacent habitats			
Farmland (pasture, arable)	Sub-Parish	Common habitat although capable of supporting a range of protected and notable species.	Low
Standing water	Parish to District	Ponds are a Priority Habitats and 'Standing open water' is Wiltshire BAP Priority Habitat.	Low to Medium
Urban	Negligible to Sub-Parish	Common and widespread habitat.	Negligible to Low
Woodland	Parish to District	'Lowland Mixed Deciduous Woodland' is a Priority Habitat and 'Woodland' is a Wiltshire BAP Habitat.	Low to Medium
Protected and notable species			

Ecological feature	Ecological importance	Reason for valuation	EIA receptor sensitivity
Notable plants	N / A	No notable plant species identified within the Site.	N / A
Invertebrates	Sub-Parish	No notable invertebrate species were recorded and the presence of significant populations of such species is considered unlikely.	Low
Amphibians	Sub-Parish – Parish	Habitats within the Site provide both terrestrial and breeding habitat for common amphibians including common toad (a Priority Species). Presence of great crested newt (a legally protected Priority Species) was discounted.	Low
Reptiles	Sub-Parish	Low population of grass snake present in suitable habitat.	Low
Breeding birds	Parish	Notable confirmed/probable breeding species within the Site included dunnock, song thrush, greenfinch and whitethroat. Foraging habitat for barn owl, with potential roost site(s).	Low
Hazel dormouse	Parish	Evidence of dormice recorded; assumed to be present in all hedgerows. Dormouse is a Priority Species and Wiltshire BAP species.	Low
Badger	Sub-Parish	Three outlier setts recorded within the Site. Grassland and hedgerows provided suitable badger foraging habitat. Badgers are a common and widespread which receive legal protection for welfare reasons only.	Low
Bats	Parish	At least ten species recorded foraging or commuting within the Survey Area including greater and lesser horseshoe, barbastelle, noctule, soprano pipistrelle and long-eared bat, which are Priority Species. Two trees found to support day roosts for low numbers (max. count 1) of Natterer's bats, and one tree found to support a day roost for low numbers (max. count 1) of pipistrelle bats.	Low

Ecological feature	Ecological importance	Reason for valuation	EIA receptor sensitivity
Otter	Parish	Watercourse provided a movement corridor and habitat for foraging otters, although no evidence of this species was recorded within the Site. Otter is a legally protected Priority Species and Wiltshire BAP Species.	Low
Water vole	N/A	Not recorded during the surveys and assumed to be absent.	N/A
Beaver	N/A	Not recorded during the surveys and assumed to be absent.	N/A
Other mammals	Sub-Parish to Parish	Habitats within the Site were suitable for hedgehog, harvest mouse and water shrew, all Priority Species, which were assumed to be present. Presence of brown hare, a Priority Species, confirmed within grassland habitats.	Low

Future Baseline

7.101 In the absence of the Proposed Development, the agricultural use of the Site is likely to be maintained and therefore the habitat types and extents within the Site are unlikely to change considerably.

7.102 Future changes to the habitats from land use or other influences (e.g. *Chalara* or other diseases) within the Site could affect the presence and distribution of protected/notable species that use them. A change from largely pastoral use to arable use could decrease the value of the Site for invertebrates, amphibians, reptiles, birds and foraging bats.

7.103 The full effects of climate change on biodiversity cannot be certain, with many of the effects likely to be long-term, incremental and varied depending upon individual receptors. A summary of potential effects has been produced by the Inter-Agency Climate Change Forum (IACCF, 2010)[35]. Within the terrestrial and freshwater environments, key potential effects have been identified as:

- Changes to the extent and distribution (i.e. a reduction in presence) of terrestrial and freshwater habitats (and associated species) as a result of changing rainfall patterns and associated hydrology;
- Detrimental effects on freshwater ecosystems due to increasing temperature (e.g. reduction/loss of certain species); metabolic rates of many freshwater organisms and ecosystem productivity are directly regulated by temperature;

- Northward movement of warmth-loving species and retreat of northerly-distributed species; and

- Changes in the timing of natural events, including plant flowering, bird nesting and the emergence of insects (phenological changes).

Primary and Tertiary Mitigation

Construction Stage

7.104 The following primary and tertiary mitigation which has been evaluated as part of the construction stage assessment is outlined within this section.

7.105 The assessment assumes the implementation of standard best practice measures during the construction and operational phases of the Proposed Development, where these are not required specifically to mitigate ecological impacts. These measures comprise:

- Controls to minimise the risk of construction-phase pollution (affecting soil, water and air), as implemented through a CEMP; refer to **Chapter 4: The Proposed Development** and **ES Volume 3: Environmental Management Plan (EMP)**.

- Establishment of habitat protection buffers in accordance with Root Protection Areas (in accordance with BS 5837:2012 'Trees in relation to design, demolition and construction - Recommendations'[36]; and an approved Tree Protection Plan) and other standard practice around retained veteran trees, woodlands and hedgerows (minimum 15m buffer for veteran trees, 10m for woodland and 5m for hedgerows).

- Controls on construction lighting as implemented through a CEMP; refer to **Chapter 4: The Proposed Development**.

- All construction lighting and compounds would be located a minimum of 10m away from the retained hedgerows and 20m from woodland edges and the watercourse. Construction scheduled for daytime working hours and any construction lighting directed away from retained vegetation. Lighting would be turned off at sunset between April and October (inclusive); motion-activated lighting on short timers would be used for night-time security, where required.

- Clearance of trees and hedgerows will be undertaken between September and February inclusive (i.e. outside of the main bird-breeding season) to ensure that there are no direct effects on nesting birds. If clearance was required during the breeding season, the ECW would first check the affected habitats for active nests. If any were found, the nest(s) and immediate surroundings would be left undisturbed until the eggs had hatched and young had fledged, or the breeding attempt was otherwise concluded (i.e. nest abandoned/predated). The ECW would establish a buffer zone around the nest (e.g. 5m) to minimise the risk of accidental damage/destruction.

7.106 A Construction Ecological Management Plan (CEcoMP) will be produced to ensure the delivery of all ecological avoidance, mitigation, compensation and enhancement measures during the pre-construction and construction phases of the Proposed Development. This will include the primary and tertiary mitigation identified above and the secondary mitigation measures identified in the *Assessment of* Effects section below. It is anticipated that the

CEcoMP will be secured via a planning condition; the document could form an appendix to the CEMP. The CEcoMP will include:

- Risk assessment of all potentially damaging construction activities;
- Identification of biodiversity protection zones (permanent and temporary);
- Details of requirements for Natural England Mitigation Licences for dormice, and bats / badger;
- Invasive Species Method Statement (if required);
- Practical measures to avoid or reduce impacts (including lighting) during construction to amphibians, reptiles, nesting birds, dormice, bats, badger, otter and hedgehog;
- The location and timing of sensitive works to avoid harm to biodiversity features;
- Construction lighting controls to protect bat flight lines;
- The times during construction when specialist ecologists need to be present onsite;
- Responsible persons and lines of communication;
- The role and responsibilities onsite of an Ecological Clerk of Works (ECW);
- Use of protective fences, exclusion barriers and warning signs; and
- Ongoing monitoring, including compliance checks during construction and immediately post-completion of construction works.

Operational Stage

7.107 The following primary and tertiary mitigation which has been evaluated as part of the operational stage assessment is outlined below.

7.108 The Proposed Development has been progressed in accordance with the ecological hierarchy of avoiding features of ecological importance wherever possible; mitigating for unavoidable effects; compensation (if necessary); and enhancement; refer to the Parameter Plan - Composite (**Figure 4.1**).

7.109 The following primary mitigation measures have been assessed:

- Retention of 3km of hedgerows (as shown on **Figure 4.1**) and associated ditches, where present. Existing breaks in hedgerows (shown as a 'y' on **Figure 4.1**) will be used for connections (road / paths / utilities) as far as possible;
- Retention of Clackers Brook Tributary and the use of existing culvert crossings (shown as an 'x' on **Figure 4.1**) for new pathway links will avoid constriction of the corridor;
- Retention of trees, including the three veteran trees;
- Creation of an extensive area of Green Infrastructure in the southwest of the Site;

- Creation of Green Infrastructure throughout the Site including natural landscape, hedgerows, allotments/orchards, woodland, spaces for recreational use, and SuDS.

- Creation of structural landscape buffer zones, as shown on **Figure 4.1**, which will also serve as habitat connections and buffers to retained habitats; and

- Provision of a buffer of at least 15m width between the off-Site broadleaved woodland and the development footprint.

Assessment of Effects, Secondary Mitigation and Residual Effects

Construction Stage

Direct loss and fragmentation of existing habitats and creation of new habitats on the Site

Trees/woodland, hedgerows, watercourses, other habitats and plants

7.110 Site clearance would result in the loss of approximately 27.18 ha of modified grassland and approximately 230 linear metres of hedgerow, including approximately 210 linear metres of hedgerow identified as species-rich (refer to **Appendix 7.16).** All remaining habitats and hedgerows would be retained; no tree removal is proposed as a result of the Proposed Development. The tributary to Clackers Brook and ditches are to be retained. This habitat loss would be a medium magnitude change on receptors of low to medium importance, which would be a direct, adverse, minor to moderate effect in the medium-term.

7.111 The integral green infrastructure proposals through the Proposed Development, including woodland, hedgerow, SuDS, and allotments/orchards will increase habitats/biodiversity across the Site. Habitat losses and predicted gains as a result of the Proposed Development are detailed in **Appendix 7.16**. Once established, the integral habitat creation proposals would result in a beneficial, medium magnitude change on receptors of low to medium importance which is likely to be a permanent, beneficial effect in the long-term, which is considered to be minor to moderate.

Secondary Mitigation or Enhancement

7.112 No secondary mitigation or enhancement is required.

Residual Effect

7.113 In the absence of secondary mitigation, the residual effect for habitats on the Site is that same as that reported in the pre-mitigation scenario.

Significance

7.114 The adverse medium-term effect is considered to be **Not Significant**. The beneficial long-term effect is considered to be **Significant**.

Invertebrates

7.115 The loss of common and widespread habitats within the Site is unlikely to affect the populations or distribution of notable invertebrate species. The retention of the watercourse and the majority of the hedgerow network within the Site would be expected to maintain the invertebrate assemblage currently present. Overall, it is considered that the impacts of habitat removal on invertebrates would be a small magnitude change on a receptor of low importance, which will be a direct, medium-term and adverse, negligible effect.

7.116 Once established, the integral habitat creation proposals would result in a beneficial, small magnitude change on receptors of low importance, which is likely to be a permanent, beneficial effect in the long-term, which is considered to be negligible.

Secondary Mitigation or Enhancement

7.117 In addition to habitat creation proposals as part of the Green Infrastructure, a minimum equivalent of one insect / bee brick per unit will be incorporated into the Proposed Development, in a south-facing location on buildings or other walls concentrated around areas of nectar and pollen-rich planting within the open space where possible. Locations of insect/bee bricks will be detailed in the CEcoMP.

Residual Effect

7.118 The residual effect for invertebrates is the same as that reported in the pre-mitigation scenario.

Significance

7.119 The adverse medium-term effect and the beneficial long-term effect are both considered to be **Not Significant**.

Amphibians

7.120 Loss of habitat would reduce the amount of suitable terrestrial habitat for common toad and other common amphibians. Without mitigation, this would be a direct, small magnitude change on a receptor of low sensitivity, which would be a medium-term, adverse, minor effect.

7.121 Once established, the integral habitat creation proposals would result in a beneficial, small magnitude change on receptors of low importance, which is likely to be a permanent, beneficial effect in the long-term, which is considered to be negligible.

Secondary Mitigation or Enhancement

7.122 In addition to habitat creation proposals as part of the Green Infrastructure, five reptile/amphibian hibernacula will be created in the south of the Site within the Public Open Space to enhance the suitability of these areas for reptiles; refer to **Figure 7.1**. The locations and installation methods will be set out in the CEcoMP.

Residual Effect

7.123 The residual effect for amphibians is the same as that reported in the pre-mitigation scenario.

Significance

7.124 The adverse medium-term effect and the beneficial long-term effect are both considered to be **Not Significant**.

Reptiles

7.125 Site clearance will also result in the loss of some reptile feeding, basking and sheltering habitat, although the majority of the habitats of highest value to reptiles will be retained. Without mitigation, this will be a small magnitude change on a receptor of low importance, which will be an adverse, medium-term, negligible effect.

7.126 Once established, the integral habitat creation proposals will result in a beneficial, small magnitude change on receptors of low importance which is likely to be a permanent, beneficial effect in the long-term, which is considered to be negligible.

Secondary Mitigation or Enhancement

7.127 In addition to habitat creation proposals as part of the Green Infrastructure, five reptile/amphibian hibernacula will be created in the south of the Site within the Public Open Space to enhance the suitability of these areas for reptiles; refer to **Figure 7.1**. The locations and installation methods will be set out in the CEcoMP.

Residual Effect

7.128 The residual effect for reptiles is the same as that reported in the pre-mitigation scenario.

Significance

7.129 The adverse medium-term effect and the beneficial long-term effect are both considered to be **Not Significant**.

Birds

7.130 Site clearance will result also in the loss of bird nesting and foraging habitat. Confirmed and probable breeding species within the Site included dunnock, song thrush, greenfinch and whitethroat. These species are widespread in lowland southern England, and there will not be significant negative impacts on the conservation status of the species concerned. Retention of the majority of the existing hedgerows will minimise potential effects. Removal of grassland will also lead to a reduction in available foraging habitat for barn owl. Overall, habitat removal during construction will be a small magnitude change on a receptor of low importance, which will be an adverse, medium-term, minor effect.

7.131 Once established, the integral habitat creation proposals will result in an increase in the quantity of bird nesting habitat, which will be a beneficial, small magnitude change on receptors of low importance which is likely to be a permanent, beneficial effect in the long-term, which is considered to be minor.

Secondary Mitigation or Enhancement

7.132 In addition to habitat creation proposals as part of the Green Infrastructure, a range of bird boxes will be provided to create nesting habitat for a variety of species. Boxes will include those suitable for swifts (and other urban nesting species) to be integrated into new buildings. Tree mounted boxes will include small and large hole boxes, and open-fronted boxes installed in retained trees. The number, specifications and locations of bird boxes will be detailed within the CEcoMP; a minimum equivalent of one box per residential unit will be provided.

Residual Effect

7.133 The residual effect for birds is the same as that reported in the pre-mitigation scenario.

Significance

7.134 The adverse medium-term effect and the beneficial long-term effect are both considered to be **Not Significant**.

Hazel dormouse

7.135 The removal of approximately 230 linear metres of hedgerow will lead to a reduction in available dormouse habitat and create breaks in the hedgerow network. This will fragment

the retained dormouse habitat, reducing connectivity between otherwise connected areas of suitable habitat.

7.136 All boundary hedgerows around the Site will be retained, which will maintain habitat connections and continue to provide suitable functional movement routes, enabling dormice to disperse between the Site and suitable habitat in the wider landscape. Furthermore, whilst dormice are generally considered arboreal, studies indicate dormice can cross habitat gaps and even major roads under certain conditions (Garland & Woods, 2005[37]; Kelm et al., 2015[38]). The 2015 research indicated that dormice (60% of the radio-marked animals) repeatedly moved on the ground, crossing roads up to 30m. Overall, loss of habitat and reduction in habitat connectivity for dormice would be a medium magnitude change on a receptor of low importance, which would be an adverse, medium-term, minor effect.

7.137 Once established, the integral habitat creation proposals will result in an onsite net gain in dormouse habitat (woodland and hedgerows), which will be a beneficial, medium magnitude change on a receptor of low importance, which is likely to be a permanent, beneficial effect in the long-term, which is considered to be minor.

Secondary Mitigation or Enhancement

7.138 The Landscape Strategy Plan will include the provision of significant new native hedgerow and woodland planting which will ensure a net gain of optimal dormouse habitat in locations accessible to the local dormouse population. Planting will include species of known benefit to dormice including hazel, hawthorn, blackthorn and spindle. In addition, 30 heavy-duty dormouse nest boxes will be provided within retained hedgerows prior to Site clearance; locations will be provided in the CEcoMP.

Residual Effect

7.139 The residual effect for hazel dormouse is the same as that reported in the pre-mitigation scenario.

Significance

7.140 The adverse medium-term effect and the beneficial long-term effect are both considered to be **Not Significant**.

Badger

7.141 The removal of grassland and hedgerows will result in the loss and fragmentation of badger foraging habitat. However, the provision of habitat corridors within the proposed Green Infrastructure will prevent the isolation of retained setts from foraging areas within the wider landscape. Habitat loss will also be partially mitigated by the implementation of the embedded mitigation, including wildflower meadow, orchard and broadleaved woodland planting suitable for foraging badgers. Overall, the loss of badger foraging habitat is considered to be a negligible effect.

Secondary Mitigation or Enhancement

7.142 No secondary mitigation or enhancement is required.

Residual Effect

7.143 In the absence of secondary mitigation, the residual effect for badger is that same as that reported in the pre-mitigation scenario.

Significance

7.144 This effect is considered to be **Not Significant**.

Bats

7.145 The majority of the linear habitats which provide flight-lines and foraging habitat for bats will be retained and buffered from the development proposals within habitat corridors. These include the majority of hedgerows, the stream corridor and the off-Site woodland along the Site boundaries. However, Site clearance would result in the loss of approximately 230 linear metres of hedgerows across the Site, which would reduce the overall habitat connectivity through the Site and could affect commuting bats through the loss or fragmentation of these linear habitat features.

7.146 Loss of habitat, including hedgerows and grassland, would also decrease habitat for night-flying invertebrates, thereby reducing the overall value of the Site for foraging bats, resulting in a medium magnitude change on a receptor of low importance, which will be an adverse, medium-term, minor effect.

7.147 Once established, the integral habitat creation proposals will provide foraging habitat for bats which will be a beneficial, medium magnitude change on a receptor of low importance, which is likely to be a permanent, beneficial effect in the long-term, which is considered to be minor.

Secondary Mitigation or Enhancement

7.148 Roosting habitat will be provided for bats both within the residential areas of the Proposed Development and within the Green Infrastructure. A minimum equivalent of one bat box per residential unit will be incorporated into new buildings and trees. All boxes proposed for buildings will be integrated into walls under the eaves or a gable end. Boxes outside of built form will be mounted onto retained mature trees within the Green Infrastructure.

7.149 Bat boxes within buildings are designed to be maintenance-free and no management will be required. Bat boxes on trees will be maintained and replaced as necessary; this will be specified in the Habitat Management and Monitoring Plans (HMMP).

Residual Effect

7.150 The residual effect for bats is the same as that reported in the pre-mitigation scenario.

Significance

7.151 The adverse medium-term effect and the beneficial long-term effect are both considered to be **Not Significant**.

Other mammals

7.152 Removal of habitats within the Site would reduce the area of habitat for hedgehog, harvest mouse and brown hare, although there is alternative habitat in the vicinity. This would be a small magnitude change on a receptor of low importance, which would be an adverse, medium-term, minor effect.

7.153 Once established, the integral habitat creation proposals will provide habitat for hedgehog and harvest mouse; overall, the long-term effect of the habitat creation proposals would reduce the impact of habitat loss for these species to a negligible effect.

Secondary Mitigation or Enhancement

7.154 No secondary mitigation or enhancement is required.

Residual Effect

7.155 In the absence of secondary mitigation, the residual effect for habitats on the Site is that same as that reported in the pre-mitigation scenario.

Significance

7.156 This effect is considered to be **Not Significant**.

Damage and degradation of habitats (trees/woodland, hedgerows, watercourses, other habitats and plants) on the Site

7.157 Most of the impact pathways by which construction works could cause habitat degradation will be avoided by the tertiary mitigation measures described above. However, retained habitats could still be degraded by construction works causing the spread of invasive non-native plant species. Without mitigation, impacts to retained habitats on the Site would be a small magnitude change on a receptor of low to medium importance, which would be a direct, long-term, adverse, negligible to minor effect.

Secondary Mitigation or Enhancement

7.158 Prior to the commencement of construction, an update survey of the Site will be carried out to re-confirm the Site baseline in respect of invasive plant species. Should any Schedule 9 Species be identified, management may be required, which would be undertaken in accordance with an Invasive Species Method Statement. The Method Statement would include steps to remove and/or prevent the spread of the invasive species a result of construction activities. The Method Statement would be appended to the CEcoMP/CEMP as appropriate. Delivery of measures would be undertaken by a specialist contractor.

Residual Effect

7.159 The sensitivity of habitats on Site is considered to be low to high. The magnitude of change, following secondary mitigation, is considered to be negligible. Therefore, there is likely to be a direct, medium-term adverse residual effect which is considered to be negligible.

Significance

7.160 This effect is considered to be **Not Significant**.

Killing/injury associated with Site clearance

Amphibians (common toad, GCN)

7.161 Site clearance could result in killing/injury of amphibians. This would be a direct, small magnitude change, which would be a medium-term, adverse, negligible effect.

Secondary Mitigation or Enhancement

7.162 Measures will be implemented during Site clearance to minimise the risk of accidental killing of or injury to amphibians (and reptiles). This will comprise habitat manipulation of the grassland and arable field margins proposed for removal to encourage any reptiles and amphibians to move into retained habitat outside of the working area. This will involve two-stage cutting of the field margins between April and mid-October. The vegetation will first be cut to 150mm and then left for 24 hours to allow reptiles/amphibians to move into adjacent habitat. Vegetation will then be cut to ground level to discourage reptiles/amphibians from

re-entering the work area. Both cuts will be supervised by the ECW. The latter cut will be preceded by a destructive search by the ECW, removing any sheltering materials such as logs and refuse. Any individual reptiles/amphibians found would be moved to suitable habitats outside of the works area, such as those adjacent to the stream corridor. Once complete, the vegetation will be maintained at a low-level (<50 mm) until the start of development works.

7.163 In the unexpected event that an individual GCN was found during Site clearance, all works in the vicinity would cease immediately. Advice would be sought from a Natural England GCN Class Licence holder who would review the requirement for a Natural England Mitigation Licence in order to allow works to proceed.

Residual Effect

7.164 The sensitivity of amphibians is considered to be low. The magnitude of change, following secondary mitigation, is considered to be negligible. Therefore, there is likely to be a direct, short-term, adverse residual effect which is considered to be negligible.

Significance

7.165 This effect is considered to be **Not Significant**.

Reptiles

7.166 Site clearance could result in the killing and/or injury of individual grass snakes. Given the limited distribution and low number of grass snake recorded within the Site, and the species' widespread local distribution, this would be a small magnitude change on a receptor of low importance, which would be an adverse, short-term, negligible to minor effect. Specific mitigation measures required to ensure legal compliance are set out below.

Secondary Mitigation or Enhancement

7.167 Measures will be implemented during Site clearance to minimise the risk of accidental killing of or injury to reptiles (and amphibians). This will comprise habitat manipulation of the grassland and arable field margins proposed for removal to encourage any reptiles and amphibians to move into retained habitat outside of the working area. This will involve two-stage cutting of the field margins between April and mid-October. The vegetation will first be cut to 150mm and then left for 24 hours to allow reptiles/amphibians to move into adjacent habitat. Vegetation will then be cut to ground level to discourage reptiles/amphibians from re-entering the work area. Both cuts will be supervised by the ECW. The latter cut will be preceded by a destructive search by the ECW, removing any sheltering materials such as logs and refuse. Any individual reptiles/amphibians found would be moved to suitable habitats outside of the works area, such as those adjacent to the stream corridor. Once complete, the vegetation will be maintained at a low-level (<50 mm) until the start of development works.

Residual Effect

7.168 The sensitivity of reptiles is considered to be low. The magnitude of change, following secondary mitigation, is considered to be negligible. Therefore, there is likely to be a direct, short-term, adverse residual effect which is considered to be negligible.

Significance

This effect is considered to be **Not Significant**.

Hazel dormouse

7.169 During vegetation removal a direct effect on a proportion of the onsite dormouse population through killing and/or injury of individual animals could occur. This would be a medium magnitude change on a receptor of low importance, which would be an adverse, short-term, minor effect. Mitigation is proposed to ensure legal compliance; see below.

Secondary Mitigation or Enhancement

7.170 All hedgerow/scrub removal will be undertaken under a Natural England Dormouse Mitigation Licence. All mitigation will be detailed in the Application Method Statement and will include appropriate methodology and timing of hedgerow removal to avoid impacts on individual dormice. Hedgerow removal will be undertaken through either a one-stage or two-stage clearance process in order to minimise the risk to dormice:

- One-stage clearance: Clearance of hedgerow/scrub vegetation in September/October or April/May.

- Two-stage clearance: The hedgerow sections would firstly be cut, using hand tools, to a minimum height of 150 mm during winter (November to March inclusive) when dormice are likely to be hibernating at ground level; this would render the area unsuitable for dormice, encouraging them to move out of the affected area on emergence from hibernation in spring. The coppiced stumps would be removed from May onwards, when dormice are unlikely to be present at ground level. A suitably experienced ecologist would supervise both stages of the hedgerow removal and undertake a finger-tip search for dormice/nests.

Residual Effect

7.171 The sensitivity of hazel dormouse is considered to be low. The magnitude of change, following secondary mitigation, is considered to be negligible. Therefore, there is likely to be a direct, short-term, adverse residual effect which is considered to be negligible.

Significance

7.172 This effect is considered to be **Not Significant**.

Badger

7.173 Depending upon patterns of badger activity at the time of construction, development could result in the destruction or damage to up to three outlier setts recorded within the Site boundary, and/or killing or injury of any badgers present.

7.174 Badgers could become trapped in open excavations during the construction phase and could potentially be harmed by construction materials. Mitigation measures to ensure legal compliance would be implemented.

7.175 Overall, this would be a small magnitude change on a receptor of low importance, which would be an adverse, short-term, negligible effect. Mitigation to ensure legal compliance is set out in below.

Secondary Mitigation or Enhancement

7.176 Prior to construction, a re-survey of the Site will be undertaken to ensure no new badger setts are present within or in close proximity to the working area, and also to establish current activity and status of the identified badger setts. This will inform further the required avoidance and/or mitigation measures, which will be detailed within the CEcoMP.

7.177 For retained setts, exclusion zones marked by post and rail fencing (or similar) would be set out at a 20m radius around these setts prior to construction to avoid any accidental damage. Where retention of setts is not feasible (given consideration of relevant technical constraints), a Natural England Badger Development Licence would be obtained to enable the temporary or permanent closure of the affected setts between July and November, as advised by the ECW. No works would be undertaken in the area around an affected sett until the Licence was in place and the closure completed in accordance with the Licence method statement.

7.178 General construction management measures to minimise impacts on badgers will be adhered to during construction to protect badger welfare. Excavations and piping (>100 mm in diameter) will be fenced/capped overnight to deter badgers from entering; excavations that cannot be covered will have a means of escape for any animals that may fall in (e.g., sloping sides / ramps a maximum of 1:2 gradients). Fuel, oil and chemicals will be stored in secure sites within the construction compound, and no fires will be lit.

Residual Effect

7.179 The sensitivity of badger is considered to be low. The magnitude of change, following secondary mitigation, is considered to be negligible. Therefore, there is likely to be a direct, short-term, adverse residual effect which is considered to be negligible.

Significance

7.180 This effect is considered to be **Not Significant**.

Otter

7.181 Otters could become trapped in open excavations during the construction phase and could potentially be harmed by construction materials. Although unlikely, this impact would be a small magnitude change on a receptor of low importance, which would be an adverse, short-term, negligible effect.

Secondary Mitigation or Enhancement

7.182 Best practice measures employed for badgers will also mitigate any impacts on otter, should an individual enter the works area at night.

Residual Effect

7.183 The sensitivity of otter is considered to be low. The magnitude of change, following secondary mitigation, is considered to be negligible. Therefore, there is likely to be a direct, short-term, adverse, residual effect which is considered to be negligible.

Significance

7.184 This effect is considered to be **Not Significant**.

Other mammals

7.185 There is potential for killing/injury of these species during Site clearance. Hedgehogs could become trapped in open excavations during the construction phase and could potentially be harmed by construction materials. This impact would be a small magnitude change on a receptor of low importance, which would be an adverse, short-term, negligible effect.

Secondary Mitigation or Enhancement

7.186 Clearance of hedgerows will be preceded by a hand search for hedgehogs by the ECW (at the same time as a search for dormice). Any animals found will be moved to suitable retained habitat outside of the work area by the ECW.

7.187 The mitigation measures proposed for badger will also minimise the risk of hedgehogs getting trapped/harmed in excavations.

Residual Effect

7.188 The sensitivity of other mammals is considered to be low. The magnitude of change, following secondary mitigation, is considered to be negligible. Therefore, there is likely to be a direct, short-term, adverse residual effect which is considered to be negligible.

Significance

7.189 This effect is considered to be **Not Significant**.

Disturbance associated with noise, lighting and other visual stimuli

Birds

7.190 There would be no direct loss of barn owl roosts as a result of the Proposed Development as the tree identified as supporting an assumed barn owl roost would be retained within habitat corridors. However, barn owls using this roost site could be negatively impacted by disturbance from noise and vibration during construction. This would be a low magnitude change on a receptor of low importance, which will be an adverse, short-term and minor effect (not significant).

7.191 Construction activity will also cause localised noise and visual disturbance, which could cause displacement of other nesting birds in retained habitat in the immediate vicinity, although some will be tolerant of disturbance or will become acclimatised. It is likely that any impact of disturbance on individual breeding pairs will not affect the local population of affected species and will therefore be a small magnitude change on a receptor of low importance, which will be an adverse, short-term, minor effect.

Secondary Mitigation or Enhancement

7.192 Mitigation is proposed to reduce the likelihood of such effects and ensure legal compliance; see below.

7.193 The assumed barn owl tree roost will be inspected by a licensed ecologist prior to commencement of development works to check its status and, if necessary, identify an appropriate buffer zone to minimise the risk of disturbance. This buffer zone would be detailed in the CEcoMP.

Residual Effect

7.194 The sensitivity of all birds is considered to be low. The magnitude of change on all birds, following secondary mitigation, is considered to be small. Therefore, there is likely to be a direct, short-term, adverse residual effect which is considered to be minor.

Significance

7.195 This effect is considered to be **Not Significant**.

Bats

7.196 There would be no direct loss of bat roosts as a result of the development proposals, as the three trees identified as supporting roosting Natterer's bats would be retained within habitat corridors. However, bats using these roosts could potentially be disturbed by noise and vibration during construction.

7.197 Bats commuting and foraging across the Site could be adversely affected by construction lighting. This would have the greatest impact on the more light-sensitive species such as greater and lesser horseshoe, barbastelle, long-eared and *Myotis* bat species (Stone et al., 2015[39]; Rowse et al., 2016[40]). However, construction activities will be largely undertaken during the day when bats are not active, and lighting requirements are likely to occur largely during the winter months, when bats would be expected to be hibernating for the majority of the time and therefore either absent or present in very low numbers. Such effects are therefore considered to be minimal and unlikely to affect the local bat population.

7.198 Overall, disturbance is predicted to result in a small magnitude change on a receptor of low importance, which will be an adverse, short-term, negligible effect. Mitigation to ensure legal compliance is already proposed as part of the primary and tertiary mitigation.

Secondary Mitigation or Enhancement

7.199 No works to trees identified as confirmed roosts or as having potential to support roosting bats are proposed. In the event that unforeseen works affecting such trees are required (e.g. for health and safety reasons), then update tree inspections and/or dawn re-entry surveys would be undertaken to check for roosting bats. If bats were recorded, an application would be made for a Natural England Bat Mitigation Licence, which would detail in full the proposed mitigation measures.

Residual Effect

7.200 The residual effect for bats is the same as that reported in the pre-mitigation scenario.

Significance

7.201 This effect is considered to be **Not Significant**.

Otter

7.202 Otters moving along the stream corridor could be disturbed by construction noise and lighting. However, as the assumed level of use of the watercourse is low and otters are predominantly nocturnal, the effects would be largely avoided as work would be undertaken during the day. Overall, construction impacts would be a small magnitude of change on a receptor of low importance, which would be an adverse, short-term, negligible effect.

Secondary Mitigation or Enhancement

7.203 The watercourse will be protected from damage by protective fencing (e.g. Heras fencing) where construction activities are adjacent. Any contractors' compounds will be located away at least 20m from the watercourse to minimise potential lighting and disturbance impacts and any construction lighting within the vicinity of the watercourse will be turned off prior to sunset. Any security lighting will be positioned at low-height and motion activated on short-timers.

Residual Effect

7.204 The residual effect for otter is the same as that reported in the pre-mitigation scenario.

Significance

7.205 This effect is considered to be **Not Significant**.

Operational Stage

Disturbance associated with fragmentation of habitats, noise, lighting and other visual stimuli

Badger

7.206 There is a risk that retained setts in proximity to residential areas may be subject to intentional or accidental damage from human activity. The Proposed Development could potentially subject any badgers living in the vicinity to increased levels of anthropogenic disturbance, through traffic, lighting and noise. However, Natural England consider badgers to be relatively tolerant to moderate levels of noise and activity (Natural England, 2009[41]) and so any such disturbance is unlikely to give rise to a significant effect on this species.

7.207 Overall, there would be small magnitude change on a receptor of low importance, which would be an adverse, long-term, negligible effect.

Secondary Mitigation or Enhancement

7.208 Details of the management of habitats adjacent to retained setts and the avoidance of associated disturbance actions will be set out in the HMMP. The lighting parameters set out below for bats will minimise adverse lighting effects on badger movement and foraging.

Residual Effect

7.209 The residual effect for badger is the same as that reported in the pre-mitigation scenario.

Significance

7.210 This effect is considered to be **Not Significant**.

Bats

7.211 Retained habitat, including the hedgerow network, watercourse and off-Site woodland, will be buffered from development and will continue to provide suitable foraging habitat for bats through and around the Site. However, streetlighting from the new roads though the Site will result in fragmentation of these habitats, which would reduce the overall habitat connectivity through the Site and could affect commuting bats through the loss or fragmentation of these linear habitat features.

7.212 New habitat creation, including wildflower meadow, broadleaved woodland, scattered trees and SuDS features, will be located away from the rod network and would be maintained at appropriate light levels and located in areas accessible to bats, providing enhanced foraging opportunities for bats within the Site.

7.213 Street lighting and residential lighting from properties could have an adverse effect on bats, particularly the more light-sensitive species. The impact of public-realm lighting on foraging and commuting bats is variable and depends upon the species concerned and the nature of their activity, as well as on the type and intensity of the lighting. Certain bat species are known to be relatively tolerant of artificial lighting (e.g., common pipistrelle and noctule) (Stone *et al*., 2009[42]; Stone, 2013[43]). These species are likely to continue to forage over the urban areas of the Site and are unlikely to be significantly impacted by public-realm lighting. Lighting directed to features used by light-sensitive species such as lesser horseshoe bat,

long-eared bat, barbastelle and *Myotis* bats could potentially inhibit use of flightpaths, with such species likely to avoid illuminated areas (Stone, 2013[44]).

7.214 Given the recorded levels and patterns of occurrence of species during the surveys, and the integral measures proposed to buffer and retain connectivity of the known tree roosts, it is unlikely that the Proposed Development will compromise the local conservation status of populations of any bat species. Overall, it is anticipated that there will be a medium magnitude change on a receptor of low importance, which will be an adverse, long-term, minor effect.

Secondary Mitigation or Enhancement

7.215 A strategic minimum 5m wide 'dark corridor' (<0.5 lux) is proposed along the length of the eastern Site boundary, as well as east-west dark corridors in the north and south of the Site; refer to **Figure 7.1 (EPP)**. Bat crossing points ('hop overs') will be provided across key road-breaks to ensure the maintenance of these dark corridors, retaining north-south and east-west connectivity of habitats for light-sensitive species. This will ensure that functional flight lines for bats, including light-sensitive species, are maintained during the operational stage.

7.216 The trees supporting bat roosts will be retained within minimum 5 m radius dark (<0.5 lux) buffer zones with connectivity to the dark habitat corridors. This will ensure that functional flight routes linking these roosts to new onsite habitats and wider off-Site habitats (including the adjacent broadleaved woodland) to the east and south of the Site are retained.

7.217 The detailed design of public-realm lighting will seek to minimise adverse effects on bats and maintain suitable roosting, foraging and commuting habitat for the range of bats identified within the Site. The tertiary mitigation proposals already include that lighting will be designed in accordance with current research and guidance (ILP 2018[45]; Rowse et al., 2015[46]) to direct light away from new and retained trees, hedgerows and woodland and will be avoided as far as possible within the public open space (where health and safety considerations permit) to maximise the value of the retained and new habitats for light–averse bat species. In addition and more specifically, where essential, lighting will be the minimum necessary to meet public safety requirements and designed to direct light to discrete areas appropriate for the task and prevent spill onto adjacent habitats. The lighting design will consider the following:

- Narrow Spectrum lights with no UV content, e.g. warm white LED (up to 2700 K).
- Variable lighting regimes (motion sensors or part night lighting) in areas close to watercourse and Site boundaries.
- Directional downlights - illuminating below the horizontal plane.
- Reducing the height of light units (whilst ensuring light does not spill above the horizontal plane).
- Use of fore/rear shields to restrict light direction.
- Avoidance of upward light (e.g. ground mounted floodlights up-lighting trees, buildings and vegetation).

7.218 Lighting proposals will be reviewed by a suitably qualified ecologist and will be subject to approval by Wiltshire Council, for example through an appropriate Planning Condition.

Residual Effect

7.219 The sensitivity of bats is considered to be low. The magnitude of change, following secondary mitigation, is considered to be small. Therefore, there is likely to be a direct, long-term, adverse residual effect which is considered to be minor.

Significance

7.220 This effect is considered to be **Not Significant**.

Otter

7.221 Otters passing along the watercourse within the Site could be disturbed by increased levels of anthropogenic activity, through traffic, lighting and noise. However, Clackers Brook Tributary will be buffered from built development by Green Infrastructure, with the exception of the two new pedestrian/cycleway crossings, which will use existing culverts and will allow continued passage by otters.

7.222 Traffic within the Site will be speed restricted in accordance with the residential nature of the Proposed Development; therefore, the risk for potential for collisions with otters will be low. Overall, there will be small magnitude change on a receptor of low importance, which will be an adverse, long-term, negligible effect.

Secondary Mitigation or Enhancement

7.223 The lighting parameters set out above will avoid adverse lighting effects on otter movement.

Residual Effect

7.224 The sensitivity of otter is considered to be low. The magnitude of change, following secondary mitigation, is considered to be negligible. Therefore, there is likely to be a direct, long-term, adverse residual effect which is considered to be negligible.

Significance

7.225 This effect is considered to be **Not Significant**.

Other mammals

7.226 During the operational phase, hedgehogs are likely to use gardens and open space within the Proposed Development for foraging and shelter. However, the presence of buildings, walls and garden fences could act as barriers to movement. New roads and increased traffic volumes could also result in an increase in hedgehog mortality.

7.227 Harvest mice are likely to continue to use hedgerows and areas of longer grassland within the open space post-construction, although there will be a net reduction in habitat for this species. It is considered unlikely that brown hare will use habitats within the Green Infrastructure of the Site, apart, perhaps, from the larger area of grassland in the south.

7.228 The retention and buffering of Clackers Brook Tributary will minimise impacts to water shrew; impacts will be negligible.

7.229 Impacts to hedgehog, harvest mouse and brown hare are considered to be a small magnitude change on receptors of low importance, which will be an adverse, long-term, negligible effect.

Secondary Mitigation or Enhancement

7.230 Hedgehog 'passes' will be created in garden close-board fencing immediately following installation to allow hedgehogs to move around the Site post-construction. Each gap will have a dimension of 13 cm x 13 cm and will either be cut out of the bottom of the fence, or a similar sized gap left at the end of a board. One hedgehog pass will be created in each boundary fence; this requirement will be set out in the CEcoMP.

Residual Effect

7.231 The sensitivity of other mammals is considered to be low. The magnitude of change, following secondary mitigation, is considered to be negligible. Therefore, there is likely to be a direct long-term, adverse residual effect which is considered to be negligible.

Significance

7.232 This effect is considered to be **Not Significant**.

Recreation Effects

LWS within 2 km

7.233 It is likely that a proportion of residents from the Proposed Development will visit the LWS within 2km of the Proposed Development, which could be affected through increased recreational pressure potentially causing habitat degradation and species disturbance.

7.234 However, given the availability of recreational areas within the Site and the absence of / limited levels of public access to the majority of LWS in the vicinity, it is likely that the numbers of visitors to the LWS would be small, although not all visitors will adversely impact the LWS. Therefore, it is considered that, although the sensitivity of the LWS are considered to be medium, the effect on the LWS are considered to be negligible.

Secondary Mitigation or Enhancement

7.235 No secondary mitigation or enhancement is required.

Residual Effect

7.236 In the absence of secondary mitigation the residual effects for LWS within 2km is the same as that reported in the pre-mitigation scenario.

Significance

7.237 This effect is considered to be **Not Significant**.

Habitats on the Site

7.238 Where retained habitats, including hedgerows and the watercourse, occur in close proximity to new residential areas, they may be adversely affected by deliberate or accidental damage and inappropriate management. Residents may also tip garden refuse (e.g. grass cuttings) into adjacent habitats and fly-tipping could occur. Without secondary mitigation, this will be a small magnitude change on receptors of low to medium importance, which will be an adverse, long-term, minor effect.

7.239 There is also potential for vandalism of the veteran trees. However, the magnitude of change and overall effect are both predicted to be negligible.

Secondary Mitigation or Enhancement

7.240 Implementation of the proposed landscape and habitat measures will deliver a minimum 10% biodiversity net gain; refer to **Appendix 7.16**. Detailed planting plans and habitat specification will be prepared to inform the Biodiversity Gain Plan and final metric calculations. The HMMP for all retained and proposed habitats will set out the habitats to be created, their target conditions, and their long-term management. The HMMP will detail Site establishment and management measures, including:

- Soil nutrient analysis prior to establishment to determine suitability or necessary preparatory measures to provide an appropriate substrate for species-rich neutral grassland creation.
- Confirmation of nutrient reduction measures such as topsoil stripping or soil inversion where required.
- Grassland seeding with locally appropriate wildflower and grass mixes to promote structural and species diversity to deliver recognised grassland communities.
- Planting of broadleaved woodland, orchard and hedgerows using locally appropriate species.
- Enhancement of riparian habitats.
- Retained hedgerow enhancement and management through gapping-up, laying, and sympathetic management to promote dense, structurally diverse growth.
- Defined cutting or grazing regimes to maintain species-rich sward structure and heterogeneity.
- Habitat monitoring at agreed intervals to assess condition and establishment against BNG targets.
- Adaptive management to refine prescriptions if monitoring indicates underperformance.

7.241 The HMMP will set out management prescriptions for the first thirty years post-construction and form part of the Biodiversity Net Gain Plan, as required by the Statutory BNG Condition, prepared in accordance with the standard HMMP template.

7.242 New and retained hedgerows will be separated from residential garden boundaries by open space wherever possible or protected by a 1.8 m post and wire mesh fence. The wire mesh would allow vegetation to grow through whilst also protecting the integrity of the developing/retained hedgerow. Relevant properties would also be subject to a restrictive covenant within their title deeds; this would restrict the permitted management to ensure that the integrity of hedgerows is maintained.

7.243 New residents from the Proposed Development could increase recreational pressure on the retained habitats, including the watercourse and adjacent woodland. However, the design of the Green Infrastructure will create attractive spaces for informal recreational use, with a network of footpaths proposed which will assist in minimising recreational pressure on the woodland.

Residual Effect

7.244 The sensitivity of habitats on the Site is considered to be low to high. The magnitude of change, following secondary mitigation, is considered to be small. Therefore, there is likely to be an indirect, long-term, adverse residual effect which is considered to be minor.

Significance

7.245 This effect is considered to be **Not Significant**.

Habitats adjacent to the Site

7.246 Increased use of public footpaths that lead from the Site and pass adjacent to off-Site habitats such as woodland, may result in these habitats being adversely affected by deliberate or incidental damage. This would be a small magnitude change on receptors of low to medium importance, which would be an adverse, long-term, minor effect.

Secondary Mitigation or Enhancement

7.247 No secondary mitigation or enhancement has been identified.

Residual Effect

7.248 In the absence of secondary mitigation the residual effects for habitats adjacent to the Site is the same as that reported in the pre-mitigation scenario.

Significance

7.249 This effect is considered to be **Not Significant**.

Invertebrates

7.250 Although there is potential for invertebrates to be indirectly affected by the minor effects on retained habitats identified above, overall, it is considered that post-construction effects on invertebrates will be negligible.

Secondary Mitigation or Enhancement

7.251 Proposed new habitats within the Green Infrastructure will be managed in accordance with the HMMP, which will include habitat management measures for the benefit of invertebrates. Insect/bee bricks incorporated into walls within the proposed residential development are designed to be maintenance-free and no management will be required.

Residual Effect

7.252 The sensitivity of invertebrates is considered to be low. The magnitude of change, following secondary mitigation, is considered to be negligible. Therefore, there is likely to be an indirect, long-term, adverse residual effect which is considered to be negligible.

Significance

7.253 This effect is considered to be **Not Significant**.

Hazel dormouse

7.254 The Proposed Development has been designed such that the majority of retained hedgerows lie within habitat corridors and not directly adjacent to development parcels. Where this has not been possible, sections of the Site boundary hedgerows would be located directly adjacent to a development parcel and could be subject to interference/removal by homeowners whose gardens abut the hedgerow, affecting its structure and functionality. A small magnitude change on a receptor of low importance is assumed, which would be an adverse, long-term, minor effect.

Secondary Mitigation or Enhancement

7.255 The HMMP will include appropriate long-term management of new and retained hedgerows, and new woodland and scrub habitat, with the objective of increasing their habitat value for dormouse. Retained hedges will be managed to maintain a minimum height of 3 m with a maximum of 50% of hedges trimmed in a single year. This will maintain the availability of foraging habitat (i.e. fruiting/flowering shrubs) within the Site in all years. Hedgerow management will be undertaken between November and February, i.e. during the dormouse hibernation period and outside of the breeding-bird period.

7.256 The dormouse nest boxes will be maintained in perpetuity and replaced if/when necessary. Dormouse monitoring will be undertaken by the licensee, as required by the Natural England Dormouse Mitigation Licence.

Residual Effect

7.257 The sensitivity of hazel dormouse is considered to be low. The magnitude of change, following secondary mitigation, is considered to be small. Therefore, there is likely to be an indirect, long-term, adverse residual effect which is considered to be negligible.

Significance

7.258 This effect is considered to be **Not Significant**.

Killing/injury associated with the Proposed Development, vehicle collisions and cat predation

Amphibians

7.259 The proposed areas of hardstanding, roads, buildings and garden fencing will create physical barriers to movement for amphibians onsite. Associated drainage will also present hazards in the form of gully pots which could trap amphibians, resulting in killing or injury to individuals. Without further mitigation, this would be a small magnitude change on a receptor of low importance, which would be an adverse, long-term, negligible to minor effect.

Secondary Mitigation or Enhancement

7.260 Proposed new habitats and amphibian/reptile hibernation sites within the Green Infrastructure will be managed in accordance with the HMMP, for the benefit of these species. Highway and highway-drainage design will seek to address impacts of entrapment of amphibians, which could otherwise lead to killing and/or injury. Highway designs will integrate dropped/recessed kerbs around gully pots. Consideration will also be given to the location of structures / material-type within gully pots to enable any individuals to escape.

Residual Effect

7.261 The sensitivity of amphibians is considered to be low. The magnitude of change, following secondary mitigation, is considered to be negligible. Therefore, there is likely to be a direct, long-term, adverse residual effect which is considered to be negligible.

Significance

7.262 This effect is considered to be **Not Significant**.

Reptiles

7.263 Reptiles may be vulnerable to increased predation from domestic cats and similar barriers to movement (as set out above for amphibians) may also occur. Overall, this would be a small magnitude change on a receptor of low importance, which would be an adverse, long-term, negligible effect.

Secondary Mitigation or Enhancement

7.264 No secondary mitigation or enhancement has been identified.

Residual Effect

7.265 In the absence of secondary mitigation the residual effect for reptiles is the same as that reported in the pre-mitigation scenario.

Significance

7.266 This effect is considered to be **Not Significant**.

Birds

7.267 It is expected that a proportion of households within the Proposed Development will own cats and, therefore, local bird populations may be adversely affected by increased predation. However, it is also expected that a proportion of households within the Proposed Development area will also provide supplementary feeding for birds, which is likely to help winter survival rates within the local populations of some species, and has been shown to improve breeding success in the following spring (Robb et al., 2008[47]). Overall, this would be a small magnitude change on a receptor of low importance, which would be an adverse, long-term, negligible effect.

Secondary Mitigation or Enhancement

7.268 No secondary mitigation or enhancement is required.

Residual Effect

7.269 In the absence of secondary mitigation the residual effect for birds is the same as that reported in the pre-mitigation scenario.

Significance

7.270 This effect is considered to be **Not Significant**.

Hazel dormouse

7.271 The dormouse population may be vulnerable to predation risk arising from the expected increase in domestic cat population. It is thought that juvenile animals are at greatest risk of cat predation, but that most mortality in the species occurs during hibernation or during early summer due to starvation (Harris & Yalden, 2008[48]). Due to the lack of research on the effect of cat predation on dormouse populations, impacts are uncertain, and it should also be noted that the Site is already likely to be subject to cat predation from the adjacent residential areas to the north. On a precautionary basis, it is considered that this would be a small magnitude change on a receptor of low importance, which would be an adverse, long-term, minor effect.

Secondary Mitigation or Enhancement

7.272 No secondary mitigation or enhancement has been identified.

Residual Effect

7.273 In the absence of secondary mitigation the residual effect for hazel dormouse is the same as that reported in the pre-mitigation scenario.

Significance

7.274 This effect is considered to be **Not Significant**.

Badger

7.275 An increased risk of badger collision/fatalities due to the presence of new roads and increased traffic may occur. However, badgers would be expected to be habituated to the existing roads in proximity to the Site and the new roads would be subject to low traffic volumes at the times badgers would be active, travelling at low speeds, and therefore the additional risk of collision would be low. New public-realm habitats within the Site would be suitable for foraging/travelling badgers. Overall, there would be small magnitude change on a receptor of low importance, which would be an adverse, long-term, negligible effect.

Secondary Mitigation or Enhancement

7.276 Details of the management of habitats adjacent to retained setts and the avoidance of associated disturbance actions will be set out in the HMMP.

Residual Effect

7.277 The sensitivity of badger is considered to be low. The magnitude of change, following secondary mitigation, is considered to be small. Therefore, there is likely to be a direct, long-term adverse residual effect which is considered to be negligible.

Significance

7.278 This effect is considered to be **Not Significant**.

Otter

7.279 Traffic within the Site will be speed restricted in accordance with the residential nature of the Proposed Development; therefore, the risk for potential for collisions with otters will be low. Overall, there will be small magnitude change on a receptor of low importance, which will be an adverse, long-term, negligible effect.

Secondary Mitigation or Enhancement

7.280 No secondary mitigation or enhancement has been identified.

Residual Effect

7.281 In the absence of secondary mitigation the residual effect for otter is the same as that reported in the pre-mitigation scenario.

Significance

7.282 This effect is considered to be **Not Significant**.

Limitations and Assumptions

Evidence base

7.283 The Extended Phase 1 Habitat Survey of the Site was updated in May 2024 and did not identify any significant habitat changes to the previous surveys undertaken in 2018, 2019 and 2021; however, it was considered appropriate to update a number of the Phase 2 surveys listed in **Table 7.2** to inform the emerging development proposals. As the habitats onsite had not changed significantly, the results of the hazel dormouse survey undertaken in 2021 was still considered valid; the age of survey data is not considered to be a limitation and accords with BS42020:2013.

7.284 Minor limitations to some of the surveys are summarised below and described in full within the relevant appendices:

- Whilst undertaking reptile surveys (**Appendix 7.8**) a small number of refugia were moved by a third party (not known) or destroyed during land management; these were re-deployed prior to or on the subsequent survey visit. Survey refugia in one field in the north-east of the Site were also destroyed by cattle during the 2021 survey period; no reptiles were recorded prior to action of cattle. Due to the presence of livestock throughout the year within this field, it was not possible to replace these refugia. This area was considered to provide sub-optimal habitat for reptiles and consequently, the absence of these refugia was not considered to be a significant constraint on the evaluation of the value of the Site for reptiles.

- During the bat activity surveys (**Appendix 7.14**), the static detector at Position 2 in August suffered a malfunction and was subsequently redeployed; this is not considered a significant limitation given the number of nights the static detectors were deployed between May-August 2024. Nighttime bat walkover route 3 was also modified on the 24th July due to the woodland being inaccessible due to dense vegetation, and on the 2nd September due to the presence of cattle.

7.285 There were no limitations to surveys that are considered to affect the reliability of the impact assessment conclusions.

Climate Change

7.286 The potential implications of climate change were considered at all stages of the assessment. Climate change adds uncertainty to predictions about long-term species presence, habitat viability, and mitigation success.

7.287 There is a risk that proposed mitigation measures, such as new habitat creation, will be affected by climate change. For example, warmer, drier summers could impede the establishment of new planting or seeding and reduce the extent of wetland habitats. In recognition of this, the mitigation measures outlined above are designed to deliver a range of habitats capable of adapting to gradual changes in environmental conditions. The drainage design incorporates allowances for predicted climate change to manage surface water sustainably, providing resilience against both human and ecological risks associated with changes in water quantity and quality. This would support controlling flooding of downstream habitats and sites during periods of high rainfall.

7.288 The proposals will increase the quantity, complexity, and connectivity of grassland, woodland, and wetland habitats within the Site, creating ecological stepping stones and strengthening habitat corridors. This will help to support ecosystem functions and improve the resilience of habitats and species within the wider landscape. As set out in Natural England's Climate Change Adaptation Manual (Natural England, 2020), reducing non-climatic pressures such as habitat fragmentation can help species populations to better withstand climate-related stresses. Maintaining sufficiently large and robust populations also increases their ability to survive extreme climatic events.

7.289 For some of the Site's key ecological receptors, specific climate resilience measures have been incorporated:

- Bats: Provision of diverse foraging habitats (woodland, species-rich grassland, wetland) to support prey availability even if climate change alters insect

emergence patterns; retained and enhanced roost features (varied location, height and elevation) to provide stable microclimates.

- Dormouse: Planting of climate-resilient native species with varied flowering and fruiting periods ensures continuous seasonal food supply despite changes in phenology; enhanced hedgerow network will provide improved dispersal opportunities.

7.290 Implementation of the HMMP will facilitate the successful establishment of new habitats and provide a flexible management framework informed by robust monitoring. This will enable timely adjustments to account for climatic and other environmental changes. Furthermore, creation of new habitats (e.g. woodland) will contribute to BNG and assist in sequestering carbon to offset that generated by the Proposed Development. Climate change may facilitate the spread of invasive species or novel diseases, which can undermine habitat quality. The HMMP will include biosecurity measures, regular monitoring, and adaptive management to minimise and respond to such risks.

7.291 It is concluded that climate change has been fully considered in the assessment and mitigation strategy and would not alter the conclusions. The design and evaluation of mitigation and enhancement measures incorporated climate adaptation principles to ensure their long-term effectiveness and monitoring frameworks have been designed to allow adaptive management in response to observed environmental changes. The Proposed Development is still predicted to deliver a net gain in biodiversity and contribute to ecological networks that increase resilience at a regional scale in the long term.

Summary

7.292 **Table 7.8** provides a summary of the effects, receptors, residual effects and conclusions of significance considered within the Chapter.

7.293 The table only provides a summary of the residual effects identified within the assessment and details of all primary, secondary and tertiary mitigation that has been taken into account is set out in detail within the Chapter and summarised within **ES Volume 3: Environmental Management Plan**.

Table 7.8: Summary of Residual and Significant Effects

Impact	Receptor	Residual Effect	Is the Effect Significant?
Construction Stage			
Direct loss and fragmentation of existing habitats and creation of new habitats on the Site	Habitats onsite (trees/woodland, hedgerows, watercourses, other habitats and plants)	In the medium-term, habitat loss would be a minor to moderate adverse effect. Once established, the integral habitat creation proposals would result in a long-term, minor to moderate beneficial effect.	No Yes

Impact	Receptor	Residual Effect	Is the Effect Significant?
	Invertebrates	In the medium-term, habitat loss would result in a negligible, adverse effect. Once established, the integral habitat creation proposals would result in a long-term, negligible beneficial effect.	No
	Amphibians	In the medium-term, habitat loss would result in a minor adverse effect. Once established, the integral habitat creation proposals would result in a long-term, negligible beneficial effect.	No
	Reptiles	In the medium-term, habitat loss would result in a negligible adverse effect. Once established, the integral habitat creation proposals would result in a long-term, negligible beneficial effect.	No
	Birds	In the medium-term, habitat loss would result in a minor adverse effect. Once established, the integral habitat creation proposals would result in a long-term, minor beneficial effect.	No
	Hazel dormouse	In the medium-term, habitat loss would be a minor adverse effect. Once established, the integral habitat creation proposals would result in a long-term, minor beneficial effect.	No
	Badger	Negligible	No

Impact	Receptor	Residual Effect	Is the Effect Significant?
	Bats	In the medium-term, habitat loss would be a minor adverse effect. Once established, the integral habitat creation proposals would result in a long-term, minor beneficial effect.	No
	Other mammals	In the medium-term, habitat loss would be a minor adverse effect. Once established, the integral habitat creation proposals would result in a long-term negligible effect.	No
Damage and degradation of habitats (trees/woodland, hedgerows, watercourses, other habitats and plants) on the Site	Habitats onsite	Negligible, adverse	No
Killing/injury	Amphibians	Negligible, adverse	No
	Reptiles	Negligible, adverse	No
	Hazel dormouse	Negligible, adverse	No
	Badger	Negligible, adverse	No
	Otter	Negligible, adverse	No
	Other mammals	Negligible, adverse	No
Disturbance associated with noise, lighting	Birds	Minor adverse effect	No
	Bats	Negligible, adverse	No

Impact	Receptor	Residual Effect	Is the Effect Significant?
and other visual stimuli	Otter	Negligible, adverse	No
Operational Stage			
Disturbance associated with fragmentation of habitats, noise, lighting and other visual stimuli	Badger	Negligible, adverse	No
	Bats	Minor adverse effect	No
	Otter	Negligible, adverse	No
	Other mammals	Negligible, adverse	No
Recreation effects	LWS within 2km	Negligible, adverse	No
	Habitats onsite	Minor adverse effect	No
	Adjacent habitats	Minor adverse effect	No
	Invertebrates	Negligible, adverse	No
	Hazel dormouse	Negligible, adverse	No
Killing/injury associated with the Proposed Development, vehicle collisions and cat predation and habitat fragmentation	Amphibians	Negligible, adverse	No
	Reptiles	Negligible, adverse	No
	Birds	Negligible, adverse	No
	Hazel dormouse	Minor adverse effect	No
	Badger	Negligible, adverse	No
	Otter	Negligible, adverse	No
	Other mammals	Negligible, adverse	No

References

[1] MHCLG (2024). *National Planning Policy Framework* (December 2024). Ministry of Housing, Communities and Local Government.
[2] Wiltshire Council (2015). Wiltshire Core Strategy; Adopted January 2015. Wiltshire Council.
[3] Joint Melksham Neighbourhood Plan 2 2020 – 2038 (Made August 2025).

[4] Wiltshire Council (2015). Bat Special Areas of Conservation (SAC) Planning Guidance for Wiltshire. Wiltshire Council.
[5] Trowbridge Bat Mitigation Strategy SPD
[6] Wiltshire Biodiversity Partnership (2008). The Wiltshire Biodiversity Action Plan. Wiltshire Wildlife Trust.
[7] Wiltshire Council (2023). Wiltshire Local Plan – Pre-Submission Draft 2020-2038 (Regulation 19).
[8] MAGIC website: https://magic.defra.gov.uk/
[9] MAGIC website: https://magic.defra.gov.uk/
[10] JNCC website: http://jncc.defra.gov.uk
[11] Natural England website: https://www.gov.uk/government/organisations/natural-england
[12] JNCC (2010). Handbook for Phase-1 Habitat Survey: a technique for environmental audit. JNCC, Peterborough.
[13] Institute of Environmental Assessment (1995). Guidelines for Baseline Ecological Assessment. E and F Spon, London.
[14] CIEEM (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland – Terrestrial, Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management, Winchester.
[15] Defra (2025). The Statutory Biodiversity Metric User Guide. July 2025.
[16] Biggs, J., Ewald, N., Valentini, A., Gaboriaud, C., Griffiths, R.A., Foster, J., Wilkinson, J., Arnett, A., Williams, P. & Dunn, F. (2014). Analytical and methodological development for improved surveillance of the Great Crested Newt. Appendix 5. Technical advice note for field and laboratory sampling of great crested newt (Triturus cristatus) environmental DNA. Freshwater Habitats Trust, Oxford.
[17] Froglife (1999). Reptile survey: an introduction to planning, conducting and interpreting surveys for snake and lizard conservation - Froglife Advice Sheet 10, Froglife.
[18] Gilbert, G., Gibbons, D.W. & Evans, J. (1998). Bird Monitoring Methods. RSPB, Sandy, Bedfordshire
[19] Shawyer, C.R. (2011). Barn Owl *Tyto alba* Survey Methodology and Techniques for use in Ecological Assessment: Developing Best Practice in Survey and Reporting. IEEM, Winchester.
[20] Bright, P., Morris, P. & Mitchell-Jones, T. (2006). The Dormouse Conservation Handbook 2nd edition. English Nature, Peterborough.
[21] Harris, S., Cresswell, P. & Jeffries, D. (1999). *Surveying Badgers*. The Mammal Society, London.
[22] Collins, J. (ed.) (2016). Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London.
[23] Collins, J. (2023). Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edn). The Bat Conservation Trust, London.
[24] Collins, J. (2023). Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edn). The Bat Conservation Trust, London.
[25] Chanin, P. (2003). Monitoring the otter Lutra lutra. Conserving Natura 2000 Rivers Monitoring Series No. 10, English Nature, Peterborough.
[26] Dean, M., Strachan, R., Gow, D. & Andrews, R. (2016). The Water Vole Mitigation Handbook (The Mammal Society Mitigation Guidance Series). Eds Fiona Mathews and Paul Chanin. The Mammal Society, London.
[27] Defra (2025). The Statutory Biodiversity Metric – Technical Annex 1: Condition Assessment Sheets and Methodology. February 2024.
[28] UKHab Ltd (2023). UK Habitat Classification Version 2.0 (at https:www.ukhab.org).
[29] CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland – Terrestrial, Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management, Winchester.

[30] British Standards Institute (2013) BS 42020:2013 Biodiversity - Code of practice for planning and development. BSI, London.
[31] Stace, C.A. (2010). New Flora of the British Isles. Cambridge University Press.
[32] Froglife (1999). Reptile survey: an introduction to planning, conducting and interpreting surveys for snake and lizard conservation - Froglife Advice Sheet 10, Froglife.
[33] Miller, B. (2001). A method for determining relative activity of free flying bats using a new activity index for acoustic monitoring. Acta Chiropterologica 3 (1): 93 – 105.
[34] Miller, B. (2001). A method for determining relative activity of free flying bats using a new activity index for acoustic monitoring. Acta Chiropterologica 3 (1): 93 – 105.
[35] IACCF (2010). Biodiversity and Climate Change in the UK. (Eds. Procter, D.A., Baxter, J.M., Crick, H.P.Q., Mortimer, D., Mulholland, F Walmsley, C.A.). JNCC, Peterborough.
[36] British Standards Institute (2012). *BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations*. BSI, London.
[37] Garland, L. & Woods, M. (2005). Dormice on road verges. In Practice, Edition 48. Chartered Institute of Ecology and Environmental Management (CIEEM).
[38] Kelm, J., Lange, A., Schulz, B., Göttsche, M., Steffens, T., & Reck, H. (2015). How often does a strictly arboreal mammal voluntarily cross roads? New insights into the behaviour of the hazel dormouse in roadside habitats. Folia Zoologica, 64(4), 342-348.
[39] Stone, E., Harris, S. & Jones, G. (2015). Impacts of artificial lighting on bats: A review of challenges and solutions. Journal of mammalogy, Volume 80, Issue 3, Pages 213-219
[40] Rowse, E.G., Lewanzik, D., Stone, E.L., Harris, S. & Jones, G., (2016). Dark matters: the effects of artificial lighting on bats. In Bats in the Anthropocene: Conservation of bats in a changing world (pp. 187-213). Springer, Cham.
[41] Natural England (2009). Protection of Badgers Act 1992 (as amended). Interpretation of 'Disturbance' in relation to badgers occupying a sett. Natural England.
[42] Stone, E.L., Jones, G. & Harris, S. (2009). Street lighting disturbs commuting bats. Current Biology 19: 1-5
[43] Stone, E.L. (2013). Bats and lighting: Overview of current evidence and mitigation guidance.
[44] Stone, E.L. (2013). Bats and lighting: Overview of current evidence and mitigation guidance.
[45] ILP (2023). Guidance Note GN08/23: Bats and Artificial Lighting At Night. Institution of Lighting Professionals.
[46] Rowse, E.G., Lewanzik, D., Stone, E.L., Harris, S. & Jones, G. (2015). Dark Matters: The Effects of Artificial Lighting on Bats. In: *Bats in the Anthropocene: Conservation of Bats in a Changing World* pp 187-213. Springer.
[47] Robb, G.N., McDonald, R.A., Chamberlain, D.E., Reynolds, S.J., Harrison, T.J. & Bearhop, S. (2008). Winter feeding of birds increases productivity in the subsequent breeding season. Biology Letters. 2008 Apr 23;4(2):220-3.
[48] Harris, S., & Yalden, D. (2008). Mammals of the British Isles: Handbook. The Mammal Society, Bristol.