

**Blythe, Solar Farm, Staffordshire**

**Ecological Impact Assessment (EcIA)**



**Client:**

**Novus Renewable Services Ltd**

**Report Reference:**

**RSE\_5710b\_R1\_V2\_ECIA**

**Issue Date:**

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**PROJECT**

Client: Novus Renewable Services Ltd

Project: Solar Farm, Staffordshire

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Report Title: Ecological Impact Assessment

**DOCUMENT CONTROL**

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| Originated:         | <b>Celise Neale</b> BSc (Hons) Ecologist<br>ACIEEM   |  | 17/03/2022 |
| Technical Reviewed: | <b>Anthony Mellor</b> BSc (Hons) MSc ACIEEM<br>AMICE |  | 18/03/2022 |
| Approved for Issue  | <b>Anthony Mellor</b> BSc (Hons) MSc ACIEEM<br>AMICE |  | 18/03/2022 |
| Revisions:<br>V2    | <b>Celise Neale</b> BSc (Hons) Ecologist<br>ACIEEM   |  | 21/03/2022 |

East Midlands: West Midlands: Yorkshire

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## 1 EXECUTIVE SUMMARY

### 1.1 Background

- i RammSanderson Ecology Ltd was instructed by Novus Renewable Services Ltd to carry out an Ecological Impact Assessment (EclA) at land at Blythe House Farm, Staffordshire, ST10 4JW, to assess the likely significant effects of the project on all ecological features. This report will be used to inform a planning proposal for a solar farm development of the site and information to submit with a planning application.
- ii The site was mainly formed of improved grassland, with hedgerows, trees, ditches, tall ruderal and scrub located along the peripheries.

#### ii. Designated Sites

- iii The nearest statutorily designated site was Midland Meres & Mosses Phase 1 RAMSAR and West Midlands Mosses SAC<sup>1</sup> which are both 9.5km southeast of the site. The designated sites within the search radius boundary aren't functionally or intrinsically linked nor are any of the qualifying habitats for these sites present within the Site. Therefore, all impacts are nugatory and no further assessment or shadow HRA is needed. No significant impacts upon designated sites are anticipated as a result of the proposals.
- iv No SSSIs<sup>2</sup> are located within 5km of the Site. However, the Site was located within the IRZ limited to only SSSIs located beyond this area, such as Chartley Moss SSSI, Froghall Meadow and Pastures SSSI and Forest Banks SSSI with details of the proposed development indicating that is not of a type to impact the SSSI.
- v The site is located approximately 150m south from the nearest LWS<sup>3</sup> and located in heavily managed and modified habitats, with the A50 creating a barrier to dispersal between the sites for flora and fauna species. However, indirect pathways may still occur as a result of pollution effects during construction works, with pollution prevention guidelines incorporated to reduce potential effects on the LWS.

#### iii. Habitats

- vi Two habitats of Principal Importance were recorded on Site (hedgerow and watercourses). All hedgerows failed to qualify under the Hedgerow Regulations, 1997, though did comprise >80% native woody species. All other habitats were common and widespread and offered limited ecological value. However, they do offer conservation value as an ecological corridor and should be maintained on Site (as is planned). Therefore, the impact upon habitats as a result of the proposals is deemed negligible.

#### iv. Great Crested Newt

- i There are eight ponds situated within the site, with a further ten ponds located within 500m of the site with ecological connectivity. A number of ditches with standing water and without standing water were also located throughout the site, adjacent to existing hedgerows. The site is of value for terrestrial phase amphibians.
- vii In total, 30 records of GCN were returned within the desk study, with the closest record located 325m west-north-west of the site.
- viii Previous environmental DNA (eDNA) surveys were undertaken in 2021 by Corylus Planning and Environmental, with positive results returned on ponds within 500m of the site.

<sup>1</sup> SAC - Special Areas of Conservation

<sup>2</sup> SSSI - Sites of Special Scientific Interest

<sup>3</sup> LWS - Local Wildlife Site

ix The peripheral vegetation on site, including hedgerows, scattered trees, scattered scrub, long sward height poor semi-improved grassland and tall ruderal vegetation provide optimal conditions for foraging, refuge seeking and commuting GCN.

x Impacts on terrestrial phase amphibians are considered to be likely and therefore works should be undertaken under a protected species licence. It is considered a low impact licence for GCN is most suitable.

#### **v. Bats**

xi All trees with the exception of one (T21) are to be retained within the development. T21 was found to have low bat roosting potential. A soft fell approach is therefore recommended for its removal.

xii The primary foraging and commuting routes for bats are considered to be the sites hedgerows habitats which are being retained. Siting a solar array across the majority of the grassland habitats are considered to have negligible impact on bat foraging locally (this habitat was assessed as low quality). However, to prevent adverse impacts on bat activity within the area, a lighting strategy for the site is recommended to be sympathetic to nocturnal fauna. Furthermore, the grassland is to be enhanced for its floristic value which has potential to benefit foraging bats as a result of improved habitat for lepidoptera.

#### **vi. Birds**

ii Suitable nesting habitat for Schedule 1 birds such as barn owl (*Tyto alba*) was recorded on site within the scattered trees, though all suitable trees are to be retained. Previous Breeding Bird Surveys (BBS) were conducted in July 2021 by Lapwing Ecology, indicating the use of 51 breeding species within the site and surrounding area; most notably lapwing (*Vanellus vanellus*), skylark (*Alauda arvensis*), yellow wagtail (*Motacilla flava*), starling (*Sturnus vulgaris*), song thrush (*Turdus philomelos*) and tree sparrow (*Passer montanus*). Habitats required to sustain breeding populations of these species are retained or enhanced within the proposals. As such impacts upon breeding birds are anticipated to be reduced to negligible with the incorporation of appropriate mitigation. Any maintenance / pruning works on vegetation should be completed outside of the bird nesting season (which is considered to be March to September inclusive), with specific mitigation detailed for notable and/or protected species in Section 5. If this is not possible, a nesting bird check must be conducted by a suitably qualified ecologist immediately prior to works.

#### **vii. Reptiles**

xiii The overall site was considered to be of limited value for reptiles, consisting largely of improved grassland which in isolation is considered sub-optimal. Optimal habitats such as hedgerows, trees, ditches, tall ruderal and scrub located along the peripheries are retained within proposals. These areas are likely to support overwintering and transient reptiles through on site vegetation and log piles. Records of reptiles were returned during the desk study. Due to the extent of vegetation retention/enhancement on site and limited areas of anticipated removal, it is deemed disproportionate for further surveys to be completed. Precautionary methods of works have been recommended to minimise impact to the species group and should these be implemented; impacts are reduced to negligible.

#### **viii. Water Vole, Otter and White-Clawed Crayfish**

iii Records of water vole and otter were identified within 2km of the site. However, no watercourses with suitability for the species were located within the site or hydrologically connected to the site. Several ditches with standing water and without standing water were located adjacent to hedgerows but were not suitable for the species. Therefore, no impacts will occur to these species as a result of proposals.

xiv

**x. Principal Species**

The Site contains suitable habitat for hedgehog and common toad there are records for both species within 2km of the Site. Both these species are Species of Principal Importance (NERC Act, 2006). The risk of injury to these species should be minimised during construction to make impacts to these species negligible.

**xi. Biodiversity**

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Extensive landscaping and habitat creation are proposed, such as hedgerow, wildflower and scrub/woodland planting incorporated within the landscaping designs. Therefore, post development there will be a significant positive impact on biodiversity, with anticipated gain of 80.13 habitat units (69.88%) and 4.23 linear units (24.74%) across the site.

xvi

xvii

**xii. Compensation and Enhancements**

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Retention and enhancements of the hedgerow, scattered tree habitats, through implementing additional native planting would benefit local flora and fauna through the improvement of ecological corridors. Additional enhancements easily achievable and are anticipated to be incorporated within the development such as hedgerow, wildflower and scrub/woodland planting incorporated within the landscaping designs. Furthermore, environmental exclusion zones and the creation of a new pond within the proposed ecological mitigation area in the south of the site to further enhance the overall biodiversity and suitability for flora and fauna species.

**xiii. Monitoring**

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No monitoring is required for the proposals to be compliant with legislation and policy.

**xiv. Conclusion**

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The proposals were assessed as having no significant effect on the biodiversity conservation objectives for any important ecological features and the proposed development is compliant with relevant local, national and international legislation and policy relating to ecology.

xxi

The implementation of enhancement measures should provide a net gain in biodiversity post development.

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## 2 INTRODUCTION AND BACKGROUND

### 2.1 Purpose and Scope of this Report

- i RammSanderson Ecology Ltd was instructed by Novus Renewable Services Ltd to carry out an Ecological Impact Assessment (EclA) at land at Blythe House Farm, Staffordshire, ST10 4JW, to assess the likely significant effects of the project on all ecological features.
- ii To complete an EclA of the proposals, a desk-based assessment, Extended Phase 1 Habitat Survey and protected species assessments were carried out based upon the findings of the Preliminary Ecological Appraisal (PEA). This report is a stand-alone EclA which has been prepared following current guidance (CIEEM, 2018) and can be used to lawfully determine a planning application in line with current planning policy<sup>4</sup>. This report does not form part of a wider discipline Environmental Impact Assessment (EIA) of Environmental Statement (ES), nor does it confer the need for any such documentation.
- iii The study area was defined depending on the proposals, desk study and applicable legislation (Appendix 1) as shown in the enclosed Site Location Plan (Figure 3) and Phase 1 Habitat plan (Appendix 2) plus a buffer zone extended to include the Zone of Influence (see section below) of the proposals (hereafter referred to as the "Site").
- iv This ecological impact assessment is based on a review of the development proposals provided by the Client in Drawings BF-315-16F and BF-315-21 (Appendix 3), desk study data (third party information) and surveys of the Site. The aims of this report are to:
  - Classify the habitat types at the site based on standard Phase 1 Habitat survey methodology;
  - Evaluate any potential for protected species to be present;
  - Identify any ecological constraints that may affect the scheme design;
  - Provide recommendations for any further actions that might be required (for example, to monitor badger setts periodically through construction);
  - Identify likely significant effects on ecological receptors;
  - Assess if the proposals are compliant with legislation and policy relating to biodiversity; and
  - Identify opportunities for ecological enhancement to provide net biodiversity gain in line with the National Planning Policy Framework (NPPF, 2019).
- v This report pertains to these results only; recommendations included within this report are the professional opinion of an experienced ecologist and therefore the view of RammSanderson Ecology Ltd.
- vi The surveys and desk-based assessments undertaken as part of this review and subsequent report including the Ecological Constraints and Opportunities Plan are prepared in accordance with the British Standard for Biodiversity Code of Practice for Planning and Development (BS42020:2013) and follow current guidance (CIEEM, 2018).

### 2.2 Zone of Influence

- i The Zone of Influence is used to describe the geographic extent of potential impacts of a proposed development. The Zone is determined by the development proposals in relation to individual species ecological requirements indicated in best practice guidelines.

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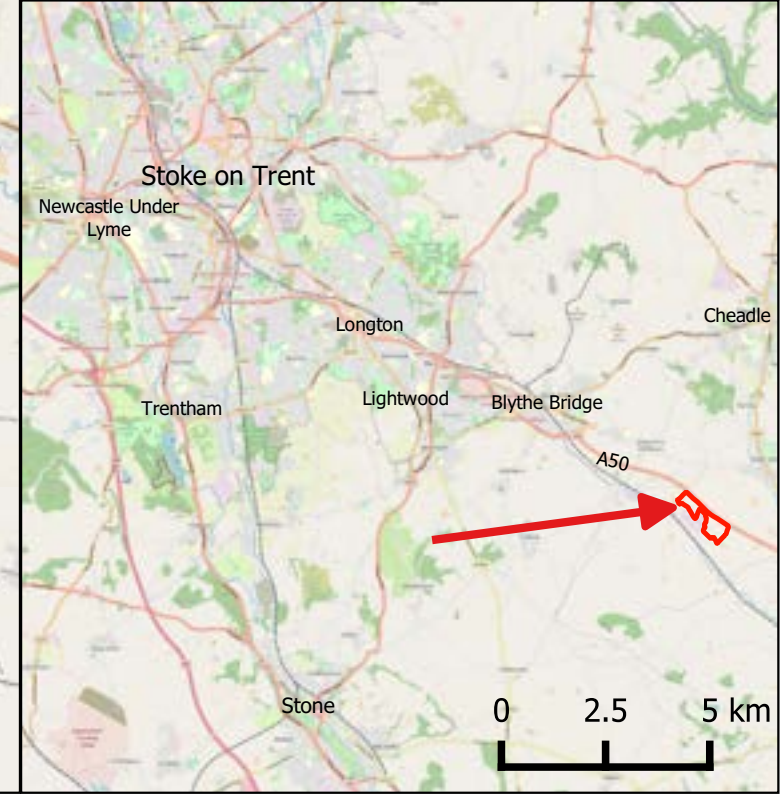
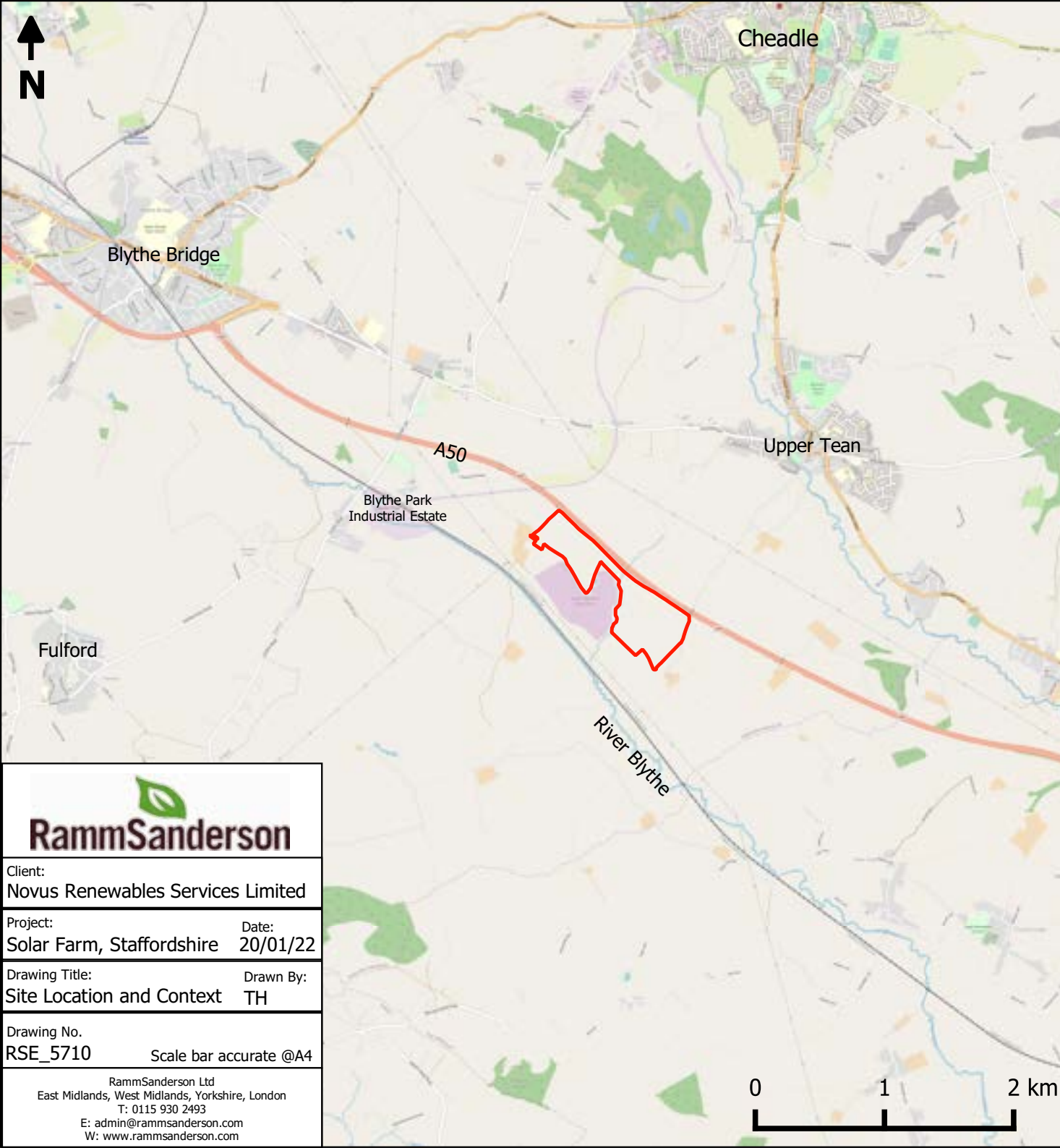
<sup>4</sup> Office of the Deputy Prime Minister Circular 06/05: Biodiversity and Geological Conservation - Statutory Obligations and Their Impact Within The Planning System

- ii In relation to great crested newts (GCN), the ZOI is considered to be up to 500m from the site boundaries, as this is the distance that Natural England would require to be considered in relation to GCN licensing. However, for this site the ZOI is only considered for water bodies within 250m of the site boundary. Guidance set out within Natural England's Method Statement template, to be used when applying for a Great Crested Newt development licence, states that surveys of ponds within 500m of the site boundary are only required when '(a) data indicates that the pond(s) has potential to support a large great crested newt population, (b) the footprint contains particularly favourable habitat, (c) the development would have a substantial negative effect on that habitat and (d) there is an absence of dispersal barriers.' Given that in this instance, the terrestrial habitat surrounding the site is generally considered 'suboptimal' with grassland lacking a tussocky thatch to support GCN refuge and the scheme is small in scale with localised impacts, it is considered that survey of ponds within 500m of the site boundary is not required, and that survey of ponds within 250m represents appropriate survey effort. Furthermore, as impacts are 50-100m from the nearest pond, only presence/absence data is required.
- iii For designated sites, the Zone of Influence can be >10km from the site and this is termed the Impact Risk
- iv Zone (IRZ). Where sites occur within an IRZ the requirement for a Habitat's Regulations Assessment or Environmental Impact Assessment may be triggered.

## 2.3 Site Context and Location

- iv The site formed part of the wider agricultural land off Riverside Rd, Tean, Stoke-on-Trent ST10 4JW. These improved grassland fields were bordered by hedgerows and tree lines, with ditches also present (central grid reference SJ995385). The village of Cresswell was to the west and the wider landscape was dominated by agricultural fields and associated farm buildings.

**Figure 1: Site Location and Context Plan**



**RammSanderson**

Client:  
Novus Renewables Services Limited

Project: Solar Farm, Staffordshire Date: 20/01/22

Drawing Title: Site Location and Context Drawn By: TH

Drawing No. RSE\_5710 Scale bar accurate @A4

RammSanderson Ltd  
East Midlands, West Midlands, Yorkshire, London  
T: 0115 930 2493  
E: admin@rammsanderson.com  
W: www.rammsanderson.com

0 1 2 km

0 2.5 5 km

## 3 METHODOLOGY

### 3.1 Ecological Impact Assessment

- i The ecological impact assessment is based on the standard best practice methodology provided by the Guidelines for Ecological impact Assessment (CIEEM, 2018). The assessment identifies important sites, habitats, species and other ecological features that are of conservation value based on factors such as legal protection, statutory or local site designations such as Sites of Special Scientific Interest (SSSI) or Local Wildlife Sites (LWS) or inclusion on Red Data Book Lists or Local Biodiversity Action Plans.
- ii The importance of an ecological feature is considered within a defined geographical context. The following frame of reference is used, or adapted to suit local circumstances:

- International and European
  - National
  - Regional
  - Metropolitan, County, vice-county or other local authority-wide area
  - River Basin District
  - Estuarine system/Coastal cell
  - Local
  - Below Local level e.g. on site only
- High Importance



Negligible Importance

- iii Consideration of impacts at all scales is important, and essential if objectives for no net loss of biodiversity and maintenance of healthy ecosystems are to be achieved.
- iv In identifying impacts, the review considers the Client's Site proposals and any subsequent recommendations made are proportionate / appropriate to the site and have considered the Mitigation Hierarchy as identified below:

- **Avoid:** Provide advice on how the development may proceed by avoiding impacts to any species or sites by either consideration of site design or identification of an alternative option.
- **Mitigate:** Where avoidance cannot be implemented mitigation proposals are put forward to minimise impacts to species or sites as a result of the proposals. Mitigation put forward is proportionate to the site.
- **Compensate:** Where avoidance cannot be achieved any mitigation strategy will consider the requirements for site compensatory measures.
- **Enhance:** The assessment refers to planning policy guidance (e.g. NPPF) to relate the ecological value of the site and identify appropriate and proportionate ecological enhancement in line with both national and local policy.

- v For the purpose of this EclA, a 'significant effect' is an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features' (explained in 3.1.i.) or for biodiversity in general. Conservation objectives may be specific (e.g. for a designated site) or broad (e.g. national/local nature conservation policy) or more wide-ranging (enhancement of biodiversity). Effects are considered significant at the range of scales from international to local. A significant effect is an effect that is sufficiently important to require assessment and reporting so that the ecological consequences of the project are understood. In broad terms, significant effects encompass impacts on structure and function of defined sites, habitats or ecosystems and the conservation status of habitats and species (including extent, abundance and distribution).
- vi Note: The following definitions are used for the terms 'impact' and 'effect' throughout this report:
  - **Impact** – Actions resulting in changes to an ecological feature. For example, the construction activities of a development removing a hedgerow.

- **Effect** – Outcome to an ecological feature from an impact. For example, the effects on a dormouse population from loss of a hedgerow.

### 3.2 Desk Based Assessment

- i Data regarding statutory and non-statutory designated sites, plus any records of protected or Priority species and habitats was requested from the local ecological records centre and online resources, details of which are provided in Table 1 below.

**Table 1: Consulted resources**

| Consultee/Resource                                                    | Data Sought                                       | Search Radius from Boundary |
|-----------------------------------------------------------------------|---------------------------------------------------|-----------------------------|
| Staffordshire Ecological Records Centre                               | Non-Statutory Site Designations                   | 2km                         |
|                                                                       | Protected/Principal Species Records               | 2km                         |
| <a href="http://www.magic.gov.uk">www.magic.gov.uk</a> <sup>5 6</sup> | Statutory Site Designations (Impact Risk Zones)   | 20km                        |
|                                                                       | Habitats of Principal Importance (NERC Act, 2006) | 1km                         |
|                                                                       | European Protected Species Licences               | 5km                         |

NB: Desk study data is third party controlled data, purchased or consulted for the purposes of this report only. RammSanderson Ecology Ltd cannot vouch for its accuracy and cannot be held liable for any error(s) in these data.

### 3.3 Phase 1 Habitat Survey

- v An extended Phase 1 Habitat Survey of the site was completed to identify habitats present. All habitats within the site boundary were described and mapped following standard Phase 1 Habitat Survey methodology (JNCC, 2010), which categorises habitat type through the identification of individual plant species.
- vi Nomenclature follows Stace (Stace, 2010) for vascular plant species and the DAFOR scale for relative abundance was used in the field to determine dominant plants within habitats and communities (D = dominant, A = abundant, F = frequent, O = occasional and R = rare).

### 3.4 Protected / Priority Species Scoping Assessment

- i The habitats on site were assessed for their suitability for supporting any legally protected or Priority species that would be affected by the proposed development. This includes invasive non-native plant species such as Japanese knotweed (*Fallopia japonica*), Himalayan balsam (*Impatiens glandulifera*) and giant hogweed (*Heracleum mantegazzianum*).
- ii The full scope of species assessments and survey methods are detailed in Appendix 3. Any incidental sightings of individual species or field signs such as footprints, latrines or feeding remains discovered during the survey were noted.

<sup>5</sup> Multi Agency Geographic Information for the Countryside Interactive GIS Map.

<sup>6</sup> MAGIC resource was reviewed on the 31/01/2022

### 3.5 Biodiversity Impact Assessment

- i. Outline Procedure**
- i Biodiversity Impact Assessment of proposals was carried out in accordance with guidelines published by DEFRA and via the DEFRA Metric Calculation Tool 3.0. The existing value of individual habitats on site is initially calculated by accurately mapping the proposed development site from information collected during a Biodiversity Scoping Assessment/Phase 1 Habitat Survey and by dividing the land into individual habitat parcels. This part of the study is informed by JNCC Phase 1 habitat and UK habitats classification systems. The distinctiveness, condition, connectivity and strategic significance of these parcels is then assessed and together with the area of each habitat, a value is assigned. A summary of how habitat distinctiveness, condition assessment, connectivity and strategic significance is determined is detailed within DEFRA best practice literature
- ii. Calculation**
- ii Once the habitat types have been input into the Biodiversity Impact Assessment calculator, along with their area, distinctiveness, condition, connectivity and strategic significance an overall score in biodiversity units is calculated.
- iii. Compensation**
- iii Once the biodiversity value of existing on-site habitats has been quantified, the value of indicatively proposed habitats to achieve a net gain as part of development must be calculated. This is calculated using the methodology applied above, taking into account the area/length of indicatively proposed habitats, their distinctiveness, condition, connectivity and strategic significance once this is established. A further two parameters are also taken into consideration at this stage. These are the time it will take to reach this target condition and the difficulty of creating/restoring each habitat type proposed. By using these parameters, the calculation takes into account that the time it takes for a habitat to establish may result in a loss of biodiversity for a period of time and also the risk of failure associated with any habitat creation/restoration
- iv Include methodology here if one was conducted otherwise delete.

### 3.6 Limitations

- i It should be noted that whilst every effort has been made to provide a comprehensive description of the site, no investigation could ensure the complete characterisation and prediction of the natural environment.
- ii Phase 1 surveys during the period of October to April are generally less efficient than during the spring or summer, and it is possible that some plant species have been missed by the field survey. However, in view of the ecological character of the habitats recorded it is considered that the survey is adequate to make a robust assessment of habitats present and the sites likely nature conservation significance.
- iii Access was not available to all of the land identified within the work scope document (private residential). However, the need to assess all of the land was not a limitation owing to the restricted extent of the proposed treatment plant area and water outfall, it is considered the areas affected by the works have been surveyed.

### 3.7 Accurate lifespan of ecological data

- i The majority of ecological data remain valid for only short periods due to the inherently transient nature of the subject. The survey results contained in this report are considered accurate for approximately 2 years, notwithstanding any considerable changes to the site conditions.

## 4 BASELINE CONDITIONS

### 4.1 Surveyor Competency

- i The ecological site walkover and ground level tree assessment was carried out by Laura McClelland BSc (Hons) MSc QualCIEEM. Laura is an ecologist in the company and has been a professional ecologist for six years and is competent to survey for these species using the methods described in Section 4. She holds a Class 1 licence for great crested newts (2018-38694-CLS-CLS).
- ii D  
Desk study results, Phase 1 plan and Phase 1 habitat description are provided in Appendix 2, Appendix 3 and Appendix 4 respectively).

iii

### 4.2 Designated Sites

- i. **Statutory Designated Sites and Non-Statutory Designated Sites**
- i The nearest statutorily designated site was Midland Meres & Mosses Phase 1 RAMSAR and West Midlands Mosses SAC which are both 9.5km southeast of the site.
- ii No SSSIs are located within 5km of the Site. However, the Site was located within the IRZ limited to only SSSIs located beyond this area, such as Chartley Moss SSSI, Froghall Meadow and Pastures SSSI and Forest Banks SSSI.
- iii The nearest non-statutorily designated site is Newton (north-east of) LWS located approximately 150m north of the sites' boundary, designated for its species rich semi-improved pasture.

### 4.3 Habitats<sup>7</sup>

- vii The site was approximately 23.7 hectares in area and formed part of the wider agricultural land off Riverside Rd. The improved grassland fields were bordered by hedgerows and tree lines, with ditches also present (central grid reference SJ995385). The village of Cresswell was to the west and the wider landscape was dominated by agricultural fields and associated farm buildings.
- i The site mainly formed of improved grassland, with hedgerows, trees, ditches, tall ruderal and scrub located along the peripheries.
- viii The majority of habitats on site were generally of limited botanical interest and poor species diversity. The value of habitats such as the scattered broad-leaved trees, scrub and tall ruderal were largely noted in their potential to support a range of protected / Priority faunal species rather than for their botanical value. The scattered trees and hedgerows offered some value as ecological corridors for the dispersal of fauna and flora into the wider countryside. Whilst none of the hedgerows are considered 'ecologically important' under the Hedgerow Regulations (1997), all hedgerows formed of >80% native woody species are a Habitat of Principal Importance under the NERC Act (2006). The watercourses on Site are also an HPI under Section 41 of the NERC Act (2006). As such they are a material consideration during planning.

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<sup>7</sup> Full Phase 1 survey results are displayed in Appendix 5.

- ix The current proposals plans include retention of the hedgerows and watercourses and are anticipated to be enhanced with the planting of native species, environmental exclusion zones and a creation of a new pond within a proposed enhanced wildlife zone in the south of the site to further enhance the overall biodiversity and suitability for flora and fauna species. This will also improve their quality as an ecological corridor within the surrounding environment.
- ii No protected or Priority plant species were observed, and all plant species encountered were common, widespread and characteristic of the common habitat types they represent. The table below summarises the habitat types identified on site and the potential impacts as a result of the proposals and their ecological significance.

**Table 2: Phase 1 habitat types and their ecological importance**

| Habitat                                  | JNCC Code | Area (m <sup>2</sup> ) | Ecological Importance & Outcome of Proposal                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------------------------------------|-----------|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Parkland scattered trees                 | A3.1      | 258                    | Important ecologically – To be retained where possible. It is anticipated that one tree (T21) is to be removed, though enhancements are anticipated to outweigh this.                                                                                                                                                                                                                                                                                                                        |
| Improved grassland                       | B4        | 331,454                | Limited botanical and ecological value. To be cleared to facilitate the proposals.                                                                                                                                                                                                                                                                                                                                                                                                           |
| Tall ruderal                             | C3.1      | 611                    | Limited botanical and ecological value. To be cleared to facilitate the proposals.                                                                                                                                                                                                                                                                                                                                                                                                           |
| Standing water                           | G1        | -                      | May support a range of protected species, primarily amphibian species. To be retained within the development. Additional native woody species to increase botanical diversity is proposed.                                                                                                                                                                                                                                                                                                   |
| Eutrophic running water                  | G2.1      | -                      | May support a range of protected species, primarily amphibian species. To be retained within the development. Additional native woody species to increase botanical diversity is proposed.                                                                                                                                                                                                                                                                                                   |
| Defunct species poor hedgerow with trees | J.2.2.2   | -                      | May support a range of protected species, primarily nesting birds. To be retained and enhanced within the development. Additional native woody species to increase botanical diversity is proposed.                                                                                                                                                                                                                                                                                          |
| Cultivated Land/ Arable                  | J1.1      | 77,140                 | Limited botanical value. Habitats do have some value to faunal species for nesting, foraging and commuting. Areas lost to facilitate proposals, benefits of hedgerow, wildflower and scrub/woodland planting incorporated within the landscaping designs. Furthermore, environmental exclusion zones and a creation of a new pond within a proposed enhanced wildlife zone in the south of the site to further enhance the overall biodiversity and suitability for flora and fauna species. |
| Intact species-poor hedgerow             | J2.1.2    | -                      | May support a range of protected species, primarily nesting birds. To be retained and enhanced within the development. Additional native woody species to increase botanical diversity is proposed.                                                                                                                                                                                                                                                                                          |
| Dry ditch                                | J2.6      | -                      | Limited botanical and ecological value, other than for commuting purposes for protected species. To be retained within the development.                                                                                                                                                                                                                                                                                                                                                      |

#### 4.4 Protected / Priority Species/Species Groups<sup>8</sup>

- i The presence/likely absence of protected species on site and impacted by the proposals is discussed under the headings below.

ii. **Great Crested Newt (GCN)**

- x There are eight ponds situated within the site, with a further ten ponds located within 500m of the site with ecological connectivity. A number of ditches with standing water and without standing water were also located throughout the site, adjacent to existing hedgerows. The site is of value for terrestrial phase amphibians.
- ii A total of 30 records of GCN were returned within the desk study, with the closest record located 325m west-north-west of the site.
- iii Previous e-DNA surveys were undertaken in 2021 by Corylus Planning and Environmental, with positive results returned on ponds within 500m of the site. GCN are therefore highly likely to be present within the site.

iii. **Bats**

**Trees**

- iv All trees with the exception of one (T21) are to be retained within the development. T21 was found to have low bat roosting potential. A soft fell approach is therefore recommended for its removal.

**Foraging Habitat**

- xi The hedgerows, scattered broadleaved trees, scrub and tall ruderal habitats present on the peripheries of the site provided potential foraging and commuting habitat for bats, as well as providing connectivity to the wider landscape. During the desk study, records for common pipistrelle, unidentified pipistrelle and brown long-eared-bat were identified, the closest of which was 0.5km north-northeast of the site.

**Buildings**

- xii No buildings were identified on site and as such they were not assessed for bat roosts.

iv. **Birds**

- xiii The hedgerows, arable, improved grassland, tall ruderal, scrub and scattered trees located on site are suitable habitat for bird nesting sites and local records of birds of conservation concern (BoCC) were returned. Suitable nesting habitat for Schedule 1 birds such as barn owl (*Tyto alba*) was recorded on site within the scattered trees. Previous Breeding Bird Surveys (BBS) were conducted in July 2021 by Lapwing Ecology, indicating the use of 51 breeding species within the site and surrounding area including most notably lapwing, skylark, yellow wagtail, starling, song thrush and tree sparrow.

v. **Reptiles**

- xiv Records of reptiles were returned during the desk study, with the closest record located 110m northwest of the site. Habitats suitable for reptiles were located on site including arable fields, hedgerows, tall ruderal,

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<sup>8</sup> Full protected species survey results are in Appendix 7.

scrub and scattered trees. Log and brash piles were also located on site and were suitable for hibernating reptiles. The majority of the habitats on site suitable for reptiles are to be retained based on recent proposals. The site is connected to other suitable areas for reptiles to the north.

**vi. Water Vole, Otter and White Clawed Crayfish**

- xv Records of water vole and otter were identified within 2km of the site, with the closest located 325m west-northwest of the site. However, no watercourses with suitability for the species were located within the site or hydrologically connected to the site. Several ditches with standing water and without standing water were located adjacent to hedgerows but were not suitable for the species.

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**viii. Other Priority Fauna Species**

- xvi The habitats on site were suitable for hedgehogs and common toad. Records were also identified for these species, and they are considered likely present on site.
- xvii Due to a lack of suitable habitats, the site is not considered likely to support any other legally protected or Priority species.

**ix. Biodiversity**

- vi When assessed against the DEFRA Metric 3.0 for biodiversity, the site contains 114.67 baseline biodiversity units for habitat areas and 17.07 for linear feature (e.g., hedgerows) and 8.01 for river units. The most distinctive habitat within the site was the improved grassland accounting for the majority of biodiversity units due to the extensiveness of this habitat, occupying an area of 20.14Ha (approximately 40.27 baseline biodiversity units).

## 5 IMPACTS AND MITIGATION (CUMULATIVE AND/OR IN ISOLATION)

### 5.1 Planning Application Search

- i A search was conducted of planning applications within the vicinity of the proposed developments, using the County Council Planning Enquiry System and the National Planning Application Map Viewer. The search was limited to the five-year period preceding the date of issue of this report (due to the typical five-year lifetime of planning permission). Excluding retention applications (i.e. typically local-scale residential or commercial developments where an impact has already occurred), and withdrawn and refused applications, no applications were identified within the vicinity and such negligible potential to act in-combination with one or more of the proposed development.
- ii The closest application was located approximately 2.1km southwest of the Site, relating to an addition of a traditional oak framed open porch on a residential development (Planning reference 18/29666/HOU). No relevant documents were available due to the relatively low impact and localised nature of the works, and therefore no mitigation was anticipated to be required.
- iii In summary, potential cumulative impacts are predicted to remain at the geographic scale of impact significance for habitat losses to Local/County (for the proposed development alone), for great crested newts, bats, breeding birds, reptiles. In contrast, potential cumulative impacts are not predicted to elevate the geographic scale of impact significance for any other protected fauna species.

### 5.2 Habitats

- i The hedgerow and watercourses on site are the only habitats of value as they are HPI (NERC Act, 2006). The hedgerow does not qualify as an important hedgerow under the Hedgerow Regulations, 2007. The watercourses will be retained within current proposals and landscape plans (see Appendix 3). All trees with the exception of one (T21) are to be retained within the development. Therefore, impacts in isolation or combination with other developments are negligible. To mitigate potential impacts upon these habitats during construction:
  - Retained habitats/trees to be protected through fencing; and
  - Implementation of a robust pollution prevention strategy.
- ii No other habitats of importance were recorded on site (dominated by improved grassland).

### 5.3 Statutorily and Non-Statutorily Designated Sites

- i A total of five statutory designated sites were recorded within the search area, the details of which are summarised in Appendix 4 below. The nearest statutorily designated site was Midland Meres & Mosses Phase 1 RAMSAR and West Midlands Mosses SAC which are both 9.5km southeast of the site. These designated sites or any within the search radius boundary (detailed within Appendix 4) aren't functionally or intrinsically linked nor are any of the qualifying habitats for these sites present within the Site. Therefore, all impacts are nugatory and no further assessment or shadow HRA is needed.
- ii No SSSIs are located within 5km of the Site. However, the Site was located within the IRZ limited to only SSSIs located beyond this area, such as Chartley Moss SSSI, Froghall Meadow and Pastures SSSI and Forest Banks SSSI with details of the proposed development indicating that is not of a type to impact the SSSI. These designated sites aren't functionally or intrinsically linked nor are any of the qualifying habitats for these

sites present within the Site. No significant impacts upon designated sites within the IRZ are anticipated as a result of the proposals.

- iii The site is located approximately 150m south from the nearest LWS (Newton (north-east of)) and located in heavily managed and modified habitats, with the A50 creating a barrier to dispersal between the sites for flora and fauna species. However, indirect pathways may still occur as a result of pollution effects during construction works, with recommendations to include following Environment Agency Pollution prevention guidance 2013 and ensure adequate provisions are on site in the form of spill kits and wash down areas. Negligible impacts are upon designated sites are anticipated as a result of the proposals if pollution prevention measures are incorporated.

## 5.4 Fauna

### i. Great Crested Newts

- xviii The peripheral vegetation on site, including hedgerows, scattered trees, scattered scrub, long sward height poor semi-improved grassland and tall ruderal vegetation provide optimal conditions for foraging, refuge seeking and commuting GCN. The closest positive eDNA result is associated with Pond 10 on site as such impacts to terrestrial GCN are anticipated.
- xix It is therefore recommended that works should be undertaken following the approval of a protected species licence. In the first instance, a low impact licence is considered appropriate.
- i Provided the method statement can be adhered to it is not conceived that any further surveys will be required, as confirmation of GCN presence has already been established on site, therefore it is anticipated that impacts will be negligible following appropriate licencing and mitigation.

### ii. Bats

#### Bat Tree Roosts

- ii Based on the proposals, it is anticipated that all trees are to be retained where possible within the development, with one tree (T21) to be removed due to observations of decay and disease. It is noted that potential roosting features such as dead limbs, tear outs and peeling bark were noted for roosting bats, however, due to the isolated nature, exposed root system within the base and relative overall health it is recommended that soft felling technique should be implemented during the removal process, with limbs removed and lowered to the ground.

**Figure 4: T21**



#### **Bat Foraging Habitat**

- iii The hedgerows, scattered broadleaved trees, scrub and tall ruderal habitats around the peripheries of the site did provide some suitable foraging and commuting resources for bats. Whilst the site is connected to the surrounding environment, this is largely intensively modified agricultural land. Furthermore, the hedgerows and trees which are the main areas of suitable habitat are, apart from the removal of one tree, being retained as part of the development, along with the addition of all ponds in the site. With these areas being retained and the associated enhancement of the grassland across the site, foraging opportunities for bats will be enhanced owing to the improved habitat for lepidoptera, as well as maintaining habitat connectivity through the site and beyond.
- iv In assessing the site against criteria in best practice guidelines (Collins J., eds, 2016) the site was considered to offer low quality foraging and commuting habitat for bats. On this basis, a development would be of low risk to bat species foraging and commuting. Given the retention of the scattered trees and hedgerows, was considered disproportionate to undertake further bat activity surveys as impacts to bat foraging will be negligible post-development if mitigation measures from artificial lighting during operation are adhered to.
- v Artificial lighting can affect the way that bats use habitats in a number of ways, depending on the species and proximity to a roost. Direct bright lighting of a roost can cause bats to delay emergence from a roost and could even cause them to desert the roost or become entombed within it (BCT and ILP, 2018). The prey items for British bats are flying insects, and many flying insects are attracted to certain types of artificial light sources, especially those that emit light with an ultraviolet component or have a high blue spectral component (BCT and ILP, 2018). Some species of bat recorded are known to be attracted to insects gathered around light sources (such as pipistrelle, noctule, Leisler's and serotine), whereas other species actively avoid lit areas (such as long-eared bats, Myotis species, barbastelle and greater and lesser horseshoe bats). Lighting within the Site could therefore be expected to affect the ways that the bats in the area are able to

use the Site. As a result, it is recommended that construction works are to be undertaken in daylight hours only with no night hours work permitted.

vi Sensitive lighting on site should follow the guidance set out in Bats and Lighting in the UK (BCT and ILP, 2018). Therefore, associated site lighting proposals must consider the following:

- Avoid lighting where possible;
- Install lamps and the lowest permissible density;
- Lamps should be positioned to direct light to avoid upward spill onto any green corridors that could be used by commuting bats or features with bat roost potential;
- LED lighting – with no/low UV component is recommended;
- Lights with a warm colour temperature – 3000K or 2700K have significantly less impact on bats;
- Light sources that peak higher than 550nm also reduce impacts to bats; and
- The use of timers and dimmers to avoid lighting areas of the site all night is recommended.

#### **Bat Building Roost**

xx No buildings were identified on site and as such they were not assessed for bat roosts. Therefore, the presence of bat roosts on site within buildings remains likely absent.

#### **iii. Birds**

vii The hedgerows, arable, improved grassland, tall ruderal, scrub and scattered trees habitats within the site provide suitable habitat for nesting birds. Suitable nesting habitat for Schedule 1 birds such as barn owl was recorded on site within the scattered trees, though all suitable trees are to be retained. Previous Breeding Bird Surveys (BBS) were conducted in July 2021 by Lapwing Ecology, indicating the use of 51 breeding species within the site, of which 11 species are of red conservation concern, seven species are of amber conservation concern and 33 green species are of conservation concern. A further 13 non-breeding species were encountered using the survey area (two red conservation concern, four amber conservation concern and seven conservation concern species). Please see Blythe House Farm Breeding Bird Survey (2021) for full details of bird assemblage<sup>9</sup>.

viii The majority of habitats of value to breeding birds (hedgerows and trees) are to be retained within proposals. As such impacts are deemed unlikely to extend beyond the local level, however consideration should be incorporated for species of principle importance such as lapwing, skylark and yellow wagtail, that may utilise other habitats on site such as arable land.

ix It is anticipated that the distances between solar panels within the development are to be approximately 3m, with further mitigation recommended, which should follow details from RSPB<sup>10</sup> and BRE<sup>11</sup> and should include:

- Allowing sufficient room in order to allow adequate flight lines and nesting habitat availability for avian species.
- All overhead power lines, wires and supports should be designed to minimise electrocution and collision risk (for example, bird deflectors may be necessary).
- Power lines passing through areas where there are species vulnerable to collision and/or electrocution should be undergrounded unless there is adequate evidence that mitigation measures will reduce the risk to an acceptable level.

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9 Lapwing Ecology. Blythe House Farm Breeding Bird Survey (2021). End of Season Report.

10 RSPB (2014). Solar Energy. RSPB Policy Briefing. Available at: [http://ww2.rspb.org.uk/images/solar\\_power\\_briefing\\_tcm9-273329.pdf](http://ww2.rspb.org.uk/images/solar_power_briefing_tcm9-273329.pdf) (Last accessed 17/03/2022).

11 BRE (2014) Biodiversity Guidance for Solar Developments. Eds G E Parker and L Greene.

- As is anticipated within the development, vegetation must be managed by sheep, and should be maintained without chemicals, fertilisers and pesticides.
- It may be possible for panels to be at a sufficient height for regular cutting or grazing to be unnecessary. Rough pasture could then develop, potentially providing nesting sites for birds and could be incorporated through rotational grazing or a conservation grazing approach.
- Bare cultivated strips for rare arable plants, and rough grassland margins could also be beneficial. For instance, small areas of bare ground may benefit ground active invertebrates, which will provide a food source for nesting bird species.

x Any tree management works or vegetation clearance, to allow for site access, should take place outside the bird nesting season to ensure compliance with the general protection afforded to wild birds under the Wildlife and Countryside Act 1981 (as amended). If this is unavoidable, the trees and hedgerows should be carefully checked, by a suitably qualified ecologist, prior to removal. Where active nests are found, working restrictions would be put in place until follow up survey can demonstrate that all chicks have fledged. This will reduce impacts to negligible.

xi In addition, a 4-6m buffer should be implemented on any construction works to habitats retained on site, to further reduce any residual effects on notable avian assemblages observed utilising the hedgerow and tree habitats, such as starling, song thrush and tree sparrow.

#### iv. Reptiles

xii The overall habitat quality of the site limits its suitability for reptiles, mainly formed of improved grassland, with hedgerows, trees, ditches, tall ruderal and scrub located along the peripheries. Persistence of reptiles on site is therefore considered unlikely and certainly this site will not form a core area for reptiles locally. However, as there remains the residual risk for reptile to pass through the site, utilising features such as the hedgerow boundaries, a careful works procedure with regard to reptiles is recommended for site vegetation clearance.

xiii The actual need for such clearance will be minimal due to the retention of the hedgerow habitats etc, however, where other vegetation removal such as scrub or tall ruderal is required works should be conducted in temperatures above 11°C, ideally in the late morning to afternoon, when reptiles are most active. The habitats should first be cut to a height of 15-20cm by a tractor progressing at walking pace only. The area should be left for 24-48hrs and then cut to 5cm using the same method, working in the same direction as the previous cut. This will allow any reptiles present to disperse into the wider environment unharmed. In the extremely unlikely event a reptile is seen during these works, they should be allowed to escape unharmed at their own pace. Only a trained ecologist should attempt to move reptiles by hand. If multiple reptiles are encountered, works should cease, and the methodology be re-evaluated. Following this precautionary methodology reduces the likely impacts upon reptile to negligible.

#### v. Water Vole, Otter and White-Clawed Crayfish

xxi Records of water vole and otter were identified within 2km of the site, with the closest located 325m west-northwest of the site. However, no watercourses with suitability for the species were located within the site or hydrologically connected to the site. Several ditches with standing water and without standing water were located adjacent to hedgerows but were not suitable for the species. These were confirmed as likely absent on site as so proposals will not impact upon these species.

xiv

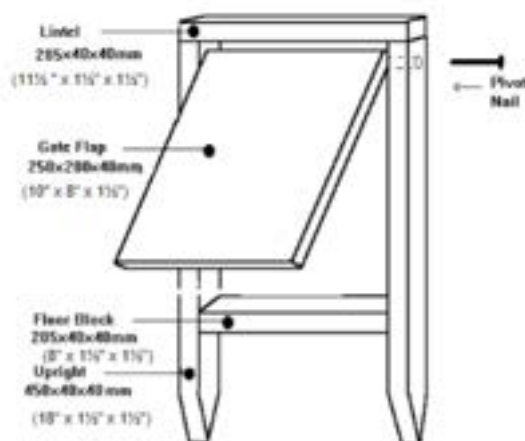
- xv It is an offence to cause disturbance to a badger whilst it is occupying a sett. Table 5 below shows the minimum permitted distances for differing activities that can cause tunnel collapse or the abandonment of setts. Appendix 7 shows the buffers in relation to recorded setts off-site. As excavations using machinery are intended during works, buffers of 30m are applicable in most instances. Should pile driving occur on Site, within 50m of the main sett, a licence from Natural England to disturb or temporarily close the sett may be required. Impacts upon this clan are likely to be at the local level when further local foraging habitat loss is taken into account.

**Table 3: Summary of badger disturbance distances**

| Distance | Activity                                                                                                                                                                                                                                                                                        |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10m      | All works to 10 metres of the nearest sett entrance must be undertaken using hand tools only. Where strimming or vegetation removal closer than this is required, a robust method statement and ecological clerk of works will be required (if roots are to be removed the 30m buffer applies). |
| 30m      | Using heavy machinery within 30 metres of any entrance to an active sett may require a licence                                                                                                                                                                                                  |
| 50-100m  | In some cases such as where pile-driving drilling or blasting which cause severe vibration are intended, a larger zone, of at least 50 metres radius may be needed, together with careful timing of operations.                                                                                 |

- xvi The operation of the site has the potential to displace badger in a northerly direction. The site will be fenced and therefore only allowing the clan free movement in a northerly direction towards the A50 and the road corridor. This significantly risks increasing mortality for badger.
- xvii Given the suitability of the Site  
, it is considered that hedgehog are likely to be utilising the Site for foraging and resting purposes. To enable these species to move freely across the Site, badger gates should be incorporated throughout the development and left at the bottom of fencing. Specification of two-way badger gates can be found in
- xviii Figure 5.  
Further mitigation could be incorporated by the closure of the existing main sett (under a Natural England licence) and creation of an artificial sett within the enhanced wildlife zone in the south of the site.

**Figure 5: Badger gate specification**



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xix Precautionary measures are also recommended to reduce the risk of impacting hedgehogs, or any other mammals during the works.

xx These precautions are:

- Mammal ladders (such as a plank) or earth ramps to be placed in any open excavations at the end of each day;
- Cap off any open pipes at the end of each day;
- Cover any open holes, or install mammal ladders or earth ramps in any open excavations at the end of each day to prevent animals from becoming trapped;
- Keep all fuel and other harmful substances in a locked area;
- Ensure any spillages are treated with spill kits;
- Night work should be avoided where possible, and any flood lighting should face away from the Site boundaries; and
- If any fresh sett digging is observed notify an ecologist immediately and leave a 20m buffer around the area until an assessment can be made.

#### vii. Biodiversity

xxi Following the creation of enhancement of hedgerows and wildflower meadow planting there will be a significant positive impact on biodiversity at the Local scale (further enhancement details provided in Section 7).

<sup>12</sup> Rural Development Service Technical Advice Note 11 Badger gates in rabbit-proof fencing 2004.

## 6 SUMMARY OF POTENTIAL IMPACTS

Table 4: Table Summary of Impacts

| Ecological Feature                                    | Importance<br>(Geographic<br>Frame of<br>Reference) | Potential Effect                                                                                                                                                                                                                                  | Mitigation Proposed                                                                                                                                                                                                              | Proposed<br>Mechanism to<br>Secure         | Residual<br>Impact |
|-------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|--------------------|
| <b>Statutory Designated Sites</b>                     | County or above                                     | None – The designated sites within the search radius boundary aren't functionally linked nor are any of these qualifying habitats present within the Site. Therefore, all impacts are nugatory and no further assessment or shadow HRA is needed. | N/A                                                                                                                                                                                                                              | N/A                                        | Not significant    |
| <b>Non-statutory designated sites</b>                 | County                                              | Likely pollution effects as a result of construction works.                                                                                                                                                                                       | Follow Environment Agency Pollution prevention guidance 2013 and ensure adequate provisions are on site in the form of spill kits and wash down areas.                                                                           | Planning Condition – details within a CEMP | Not significant    |
| <b>Habitats including invasive and Priority flora</b> | Negligible                                          | Loss of habitats of low diversity and possible indirect effects as a result of construction.                                                                                                                                                      | Retention of hedgerow and trees in accordance with root protection areas. Follow Environment Agency Pollution prevention guidance 2013 and ensure adequate provisions are on site in the form of spill kits and wash down areas. | Planning Condition – details within a CEMP | Not significant    |
| <b>Reptiles</b>                                       | Local                                               | Potential for killing/injury of individual animals during vegetation removal and construction.                                                                                                                                                    | Precautionary In relation to legislative protection of animals                                                                                                                                                                   | Planning Condition – detail within a PMW   | Not significant    |
| <b>Bats – Roosting</b>                                | Local                                               | Trees anticipated to be retained within the development. However, one tree (T21) is to be removed with low bat roosting potential.                                                                                                                | It is recommended that precautionary soft felling measures be undertaken on T21.                                                                                                                                                 | N/A                                        | Not significant    |

| Ecological Feature                   | Importance<br>(Geographic<br>Frame of<br>Reference) | Potential Effect                                                                                                | Mitigation Proposed                                                                                                                                                                                               | Proposed<br>Mechanism to<br>Secure                | Residual<br>Impact   |
|--------------------------------------|-----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|----------------------|
| <b>Bats –<br/>Foraging/Commuting</b> | Local                                               | Unlikely to be impacted by proposals as low-quality habitat present on site and linear features being retained. | Replacement of vegetation with native tree species and maintenance of connective features such as hedgerows and tree lines by adhering to root protection zones. Implementation of sensitive bat lighting scheme. | Planning Condition – details within CEMP and LEMP | Not significant      |
| <b>Great crested newts</b>           | Local                                               | Potential for killing/injury of individual animals during vegetation removal and construction.                  | Low Impact Licence, In relation to legislative protection of animals.                                                                                                                                             | Planning Condition – details within CEMP and LEMP | Significant positive |
| <b>WWC</b>                           | N/A                                                 | None                                                                                                            | No                                                                                                                                                                                                                | N/A                                               | N/A                  |
| <b>Water vole</b>                    | N/A                                                 | None                                                                                                            | No                                                                                                                                                                                                                | N/A                                               | N/A                  |
|                                      |                                                     |                                                                                                                 |                                                                                                                                                                                                                   |                                                   |                      |
| <b>Breeding birds</b>                | Local                                               | Damage or destruction of nests.<br>Potential impact on notable/protected species.                               | Precaution in relation to legislative protection of animals and further mitigation proposed for ground nesting birds.                                                                                             | Planning Condition - details within a CEMP        | Not significant      |
| <b>Otter</b>                         | N/A                                                 | None                                                                                                            | No                                                                                                                                                                                                                | N/A                                               | N/A                  |
| <b>Biodiversity</b>                  | Local                                               | Removal of low diversity and common habitats that support only limited protected species.                       | Net gain likely achievable on site through the enhancement of hedgerows and wildflower meadow planting.                                                                                                           | Planning Condition –                              | Significant positive |

| Ecological Feature | Importance<br>(Geographic<br>Frame of<br>Reference) | Potential Effect | Mitigation Proposed | Proposed<br>Mechanism to<br>Secure | Residual<br>Impact |
|--------------------|-----------------------------------------------------|------------------|---------------------|------------------------------------|--------------------|
|                    |                                                     |                  |                     | details within<br>LEMP             |                    |

## 7 COMPENSATION & ENHANCEMENT RECOMMENDATIONS

### 7.1 Habitats

xxii It is a requirement of the NPPF (2021) that developments provide a measurable net gain for biodiversity post development. This can provide important nesting habitat to small bird species. In addition, a bird nesting box could be incorporated into the design on retained trees.

xxiii In addition to current proposals, it is anticipated that a number of enhancements to biodiversity are to be incorporated within the development, with hedgerow, wildflower and scrub/woodland planting incorporated within the landscaping designs. Furthermore, environmental exclusion zones and a creation of a new pond within a proposed enhanced wildlife zone in the south of the site to further enhance the overall biodiversity and suitability for flora and fauna species.

#### i. Hedgerows

xxiv Hedgerow planting is proposed throughout the site, with a double staggered row of the species listed below. Transplant species will be planted in groups of five of the same species along the hedgerow length at 450 mm centres.

xxv Species include:

- Field maple (*Acer campestre*) – 20%;
- Common dogwood (*Cornus sanguinea*) – 10%;
- Hazel (*Corylus avellane*) – 20%;
- Hawthorn (*Crataegus monogyna*) – 25%;
- Crap apple (*Malus sylvestris*) – 5%;
- Blackthorn (*Prunus spinosa*) – 15%; and
- Guelder rose (*Viburnum opulus*) – 5%.

xxvi Planting should be undertaken during early winter, providing the ground is not frozen. Planting up gaps can be done in conjunction with coppicing existing plants, to give new plants minimum competition. To further reduce competition and aid establishment of the planted-up sections, the bases of the plants would be kept weed free through spot treatment of herbicide for the first three years.

#### 1.1.2 Wildflower Planting

xxvii Two areas within the south of the site are anticipated to be sown with AB8 Floristically Enhanced Field Margin; produced by Cotswold Grass Seed Direct (mix ref: 'MIXAB820').

xxviii In addition, existing pastures throughout the site are to be managed for enhance floristic diversity by traditional sheep grazing regime at approximate stocking rates. Areas of reinstatement post-implementation are to be over sown with appropriate conservation pasture mix, with swards unfertilised.

xxix The ground could be prepared for supplementary planting with minimal effort, using a chain harrow. Any existing vegetation should be removed, and the soil should be raked to break it up, producing a fine, firm later of soil. Seeds should be sowed during autumn or spring, and if there is a dry period, the soil being sowed should be watered.

xxx Any unwanted weeds such as nettles or thistles should be removed during the first year of management.

#### 1.1.3 Scrub/Woodland Planting

xxxi Proposed scrub planting is anticipated to be incorporated within the centre of the site, comprising a mix of the below species supplied and planted as bare root transplants (normal sizes 60-80cm).

xxxii Transplants shall be planted at 1.5m centres and protected with Tubex standard tree shelter, with a 200mm diameter. Each guard shall be secured to a 900mm long 25x25cm square section softwood timber stake using integral ratchet ties. Stakes shall be driven at least 30cm into the ground adjacent to the tree prior to fixing the tree guards.

xxxiii Species include:

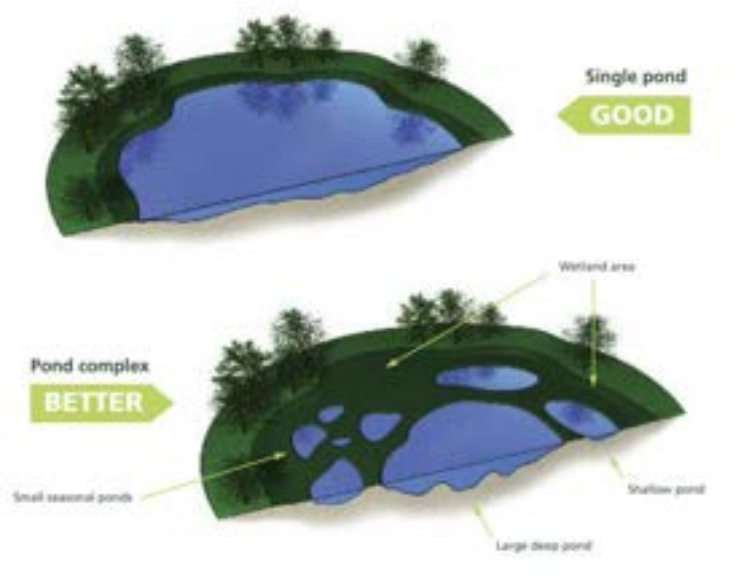
- Hazel – 25%;
- Hawthorn – 25%;
- Privet (*Ligustrum vulgare*) – 10%;
- Elder (*Sambucus nigra*) – 10%;
- Crap apple – 10%;
- Blackthorn – 15%; and
- Guelder rose – 5%.

## ii. Ponds

i If planted sympathetically, these could provide significant ecological enhancement to the site. Areas of permanent wet waterbodies and associated vegetation can provide an important invertebrate habitat area and increasing the foraging capacity of the site for fauna. The value of these ponds for wildlife can be maximised by utilising the following principles, recommended from the Freshwater Habitats Trust:

- Creating complexes of ponds rather than single waterbodies
- Include both permanent and seasonal ponds
- Almost all pond slopes are at least 12° in gradient
- Create broad, undulating wetland areas around and between ponds
- Create underwater bars and shoals to benefit aquatic plant

Figure 6: Pond Complex Example



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ii Where the ponds are designed to hold some degree of permanent standing water, they could be planted with native marginal plug plant species and with marginal vegetation, such as Naturescapes N8 Water's Edge Meadow Mixture is recommended. This comprises 24 wildflower species and nine grass species. The species in this mix will tolerate flooding once established, and many would grow in the ponds themselves.

## 7.2 Protected/Principal Species

- i Additional enhancements that could easily be met within the development scope include the incorporation of bat and bird nest boxes. Boxes could be placed on retained trees within the Site boundaries. The tree mounted bat boxes should face south (for additional warmth), and be positioned at least four metres from the ground, with the entrances being free of overhanging branches. It is also recommended that bird nest boxes be placed 1.5m below each bat box, to ensure that the birds have somewhere to nest and do not inhabit the bat boxes. Use of boxes such as the Vivara woodstone box provide a long-term nest box solution requiring limited replacement unlike wooden boxes which need regular replacement as a result of weathering. Suitable bat box dimensions are 430mm high X 270mm wide X 140mm deep. The boxes are designed to mimic natural roost sites and to provide a stable environment.

Figure 7: Bat Box Example



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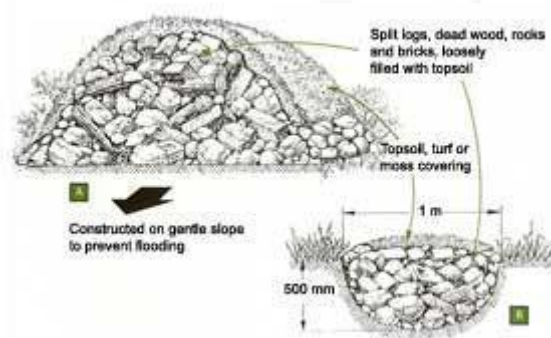
Figure 8: Bird Box Example



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- ii Log piles, rocks and dead wood under dense ground cover could also be created where feasibly possible, particularly within the proposed enhanced wildlife zone, for herpetofauna hibernacula. These will provide important places for herpetofauna to rest during the day or during cold or dry weather. Hibernacula should be c. 2m<sup>2</sup> long, a minimum of 0.5m wide and c.1m in height and comprise log or debris piles with a cap composed of topsoil and a turf covering.

Figure 9: Hibernacula Example



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- iii Additional enhancements for invertebrates could also be easily met within the development scope by including insect houses on any retained trees on site. These nest boxes will help to provide a variety of niches for a diverse spectrum of invertebrates to inhabit, and therefore help to increase the terrestrial invertebrate species diversity on site.

**Figure 10: Insect House Example**



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## 8 MONITORING

- i No monitoring is required for this project to be compliant with legislation and policy.

## 9 REFERENCES

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## 10 LEGISLATION AND PLANNING POLICY

### 10.1 General & Regionally Specific Policies

- i. Articles of British legislation, policy guidance and both Local Biodiversity Action Plans (BAPs) and the NERC Act 2006 are referred to throughout this report. Their context and application is explained in the relevant sections of this report. The relevant articles of legislation are:
  - The Environment Act 2021
  - The National Planning Policy Framework (2021);
  - ODPM Circular 06/2005 (retained as Technical Guidance on NPPF 2021);
  - Local planning policies in Staffordshire Moorlands Local Plan
  - The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019;
  - The Wildlife and Countryside Act 1981 (as amended);
  - EC Council Directive on the Conservation of Wild Birds 79/409/EEC;
  - National Parks and Access to the Countryside Act 1949;
  - The Protection of Badgers Act 1992;
  - The Countryside and Rights of Way Act 2000;
  - The Hedgerow Regulations 1997;
  - The Natural Environment and Rural Communities (NERC) Act 2006; and
  - Local Biodiversity Action Plan for Staffordshire

### 10.2 Bats and Great Crested Newts

- i. Great crested newt and species of British bats are fully protected within UK Law under *Wildlife and Countryside Act 1981* (as amended) through their inclusion in Schedule 5. Under the Act, they are protected from:
  - Intentional or reckless killing, injury, taking;
  - Damage to or destruction of or, obstruction of access to any place of shelter, breeding or rest;
  - Disturbance of an animal occupying a structure or place;
  - Possession or control (live or dead animals);
  - Selling, bartering or exchange of these species, or parts of.
- ii. This law is reinforced by the UK's transposition of the EU Habitats Regulations under *The Conservation of Habitats & Species (Amendment) (EU Exit) Regulations 2019 (as amended)*. These Regulations also prohibit:
  - the deliberate killing, injuring or taking of great crested newt or bats;
  - the deliberate disturbance of any great crested newt or bat species in such a way as to be significantly likely to affect:
    - their ability to survive, hibernate, migrate, breed, or rear or nurture their young; or
    - the local distribution or abundance of that species.
  - damage or destruction of a breeding site or resting place;
  - the possession or transport of great crested newt or bats or any other part of.
- iii. Under certain circumstances a licence may be granted by Natural England to permit activities that would otherwise constitute an offence. In relation to development, a scheme must have full planning permission before a licence application can be made.
- iv. In addition, seven British bat species are listed as Species of Principal Importance (SPI) under the Natural Environment and Rural Communities (NERC) Act, 2006. These are barbastelle (*Barbastellus barbastellus*), Bechstein's (*Myotis bechsteinii*), noctule (*Nyctalus noctula*), soprano pipistrelle (*Pipistrellus pygmaeus*), brown long-eared (*Plecotus auritus*), greater horseshoe (*Rhinolophus ferrumequinum*) and lesser horseshoe (*Rhinolophus hipposideros*).

- v Under the National Planning Policy Framework 2019 the presence of any protected species is a material planning consideration. The Framework states that impacts arising from development proposals must be avoided where possible or adequately mitigated/compensated for and that opportunities for ecological enhancement should be sought.

### 10.3 Birds

- i The Wildlife and Countryside Act 1981 (as amended) is the Priority legislation affording protection to UK wild birds. Under this legislation all birds, their nests and eggs are protected by law and it is an offence, with certain exceptions, to recklessly or intentionally:
- Kill, injure or take any wild bird;
  - Take, damage or destroy the nest of any wild bird while it is in use or being built;
  - Take or destroy the egg of any wild bird.
- ii For birds listed on Schedule 1 of the Act, it is an offence to disturb any bird while it is building a nest, is at or near a nest with young; or disturb the dependant young of such a bird.
- iii Species listed in Annex 1 of the EU Birds Directive 1994 (e.g. barn owl) are required to have special conservation measures taken to preserve their habitats and sites to be classified as Special Protection Areas (SPAs) where appropriate.

### 10.4 Reptiles

- i All reptile species are partially protected under Schedule 5 (Sections 9(1) and 9(5)) of the Wildlife and Countryside Act 1981 (as amended). This legislation protects these animals from:
- Reckless or intentional killing and injury;
  - Selling, offering for sale, possessing or transporting for the purpose of the sale or publishing advertisements to buy or sell a protected species.
- i In addition to the above legislation, UK rare reptiles; sand lizards (*Lacerta agilis*) and smooth snakes (*Coronella austriaca*), are listed under The Conservation of Habitats & Species (Amendment) (EU Exit) Regulations 2019 (as amended). This makes it an offence to;
- Capture, kill, injure and disturb;
  - Take or destroying eggs;
  - Damage or destroy breeding/resting places;
  - Obstruct access to resting places; and
  - Possess, advertise for sale, sell or transport for sale, live or dead (part or derivative).
- ii Where these animals are confirmed as present on land that is to be affected by development guidance recommends that:
- The animals should be protected from injury or killing during construction operations;
  - Mitigation should be provided to maintain the conservation status of the species locally;
  - Under the National Planning Policy Framework 2019 the presence of any protected species is a material planning consideration. The Framework states that impacts arising from development proposals must be avoided where possible or adequately mitigated/compensated for and that opportunities for ecological enhancement should be sought.

### 10.5 Badgers

- i Badgers (*Meles meles*) and their setts are protected by the Protection of Badgers Act 1992. This makes it an offence to:
- intentionally capture, kill or injure a badger;

- damage, destroy or block access to their setts;
  - disturb badgers in setts;
  - treat a badger cruelly;
  - deliberately send or intentionally allow a dog into a sett; and
  - bait or dig for badgers.
- ii Case law for this species contains example prosecutions of imprisonment for six months and heavy fines.

## 10.6 Hedgehogs and Common Toads

- i Under the NERC Act 2006, the hedgehog (*Erinaceus europaeus*) and common toad (*Bufo bufo*) are categorised as a 'Species of Principal Importance' for biodiversity. Furthermore, both are local biodiversity action plan species (LBAP) for Nottinghamshire. Listing as SPI reflects concerns that populations have suffered a rapid and sustained decline in the UK. As such, they are a material consideration during planning.

## 10.7 Hedgerows

- i All native hedgerows (including species-poor ones) are listed under Section 41 of the NERC Act (2006) and are a Local Biodiversity Action Plan (LBAP) habitat. All native hedgerows are considered to be of high conservation value.
- ii The Hedgerow Regulations (1997) classifies a hedgerow as 'important' if it:
  - Satisfies at least 1 of the criteria listed in Part II of Schedule 1
  - Has existed for 30 years or more
- iii Any person wishing to remove a hedgerow is required to submit a hedgerow removal notice to the LPA
- iv Items of Legislation that are pertinent regarding hedgerows include:
  - Hedgerow Regulations 1997
  - The countryside Rights of Way Act 2000
  - Natural Environment and Rural Communities Act (NERC) 2006
  - Planning Policy Statement (PPS) 9: Biodiversity and Geological Conservation
  - The UK Biodiversity Action Plan (UK BAP)
  - The Conservation of Habitats & Species Amendments (EU Exit) Regulations 2019 (as amended)