



LINDSAY CARRINGTON  
ECOLOGICAL SERVICES

UPDATE ECOLOGICAL APPRAISAL

HAZELEY ROAD  
TWYFORD  
HAMPSHIRE

JUNE 2020

ON BEHALF OF MAYER BROWN LTD



LINDSAY CARRINGTON  
ECOLOGICAL SERVICES

The Old Squash Court,  
Rempstone Hall,  
Rempstone,  
Corfe Castle,  
Wareham,  
Dorset,  
BH20 5JQ  
[www.ecological-services.co.uk](http://www.ecological-services.co.uk)

Telephone: 01929 477115  
E-mail: [andrew@ecological-services.co.uk](mailto:andrew@ecological-services.co.uk)

Authorisation

	Name	Date
Report prepared by:	Andrew Heideman	03/06/2020
Report checked by:	Jenny Sutch	03/06/2020

The contents of this report were correct at the time of the last survey visit. The report is provided for the sole use of the named client and is confidential.

All rights in this report are reserved. No part of it may be reproduced or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, or stored in any retrieval system of any nature, without our written permission. Its content and format are for the exclusive use of the addressee in dealing with this. It may not be sold, lent, hired out or divulged to any third party not directly involved in this situation without our written consent. It is company policy to share species records collected during our surveys with local biological records centres unless instructed otherwise by the client.

## CONTENTS

SUMMARY .....	1
1.0 INTRODUCTION .....	2
2.0 LEGISLATION .....	3
2.1 Legislation .....	3
2.2 Policy .....	5
3.0 METHODOLOGY .....	7
3.1 Field study.....	7
4.0 RESULTS .....	11
4.1 Desk study.....	11
4.2 Field survey.....	16
4.2.1 Vegetation.....	16
4.2.2 Protected species assessment .....	21
5.0 CONCLUSIONS AND RECOMMENDATIONS .....	24
6.0 REFERENCES .....	31
APPENDIX I: Site location plan .....	32
APPENDIX II: Proposed works plan .....	33
APPENDIX III: Phase 1 habitat map.....	35

## SUMMARY

1. Lindsay Carrington Ecological Services Limited were commissioned by Mayer Brown Ltd to conduct an update ecological appraisal of a section of land adjacent to the northern side of Hazeley Road, Twyford, Winchester, Hampshire, SO21 1PX. This survey is required to support a planning application relating to flood alleviation works.
2. An ecological appraisal is essentially a baseline habitat survey which is extended to include an assessment of a site's potential to support any legally protected, notable and/or invasive species. The survey is conducted with the objective of identifying any ecological constraints such as habitats of high nature conservation value, habitats that could potentially support legally protected or notable species, and the presence of invasive species.
3. The site comprises a small area of land adjacent to the north of Hazeley Road which encompasses strips of tall ruderal vegetation, a drainage ditch, a section of native hedgerow and a low number of scattered trees.
4. The River Itchen Special Area of Conservation and Site of Special Scientific Interest is situated 0.5 kilometres to the west of the works site. Further recommendations are provided in section 5.1.
5. The site encompasses a section of a species-rich native hedgerow which qualifies as both UK Biodiversity Action Plan Hedgerow habitat and as 'Important' under the hedgerow regulations 1997. Further recommendations are provided in section 5.2.
6. The site provides potentially suitable habitat for badger and the desk study returned three records of badger within two kilometres of the site. Further recommendations are provided in section 5.3.
7. The site provides potentially suitable habitat for hazel dormouse and the desk study returned five records of dormice within two kilometres of the site. Further recommendations are provided in section 5.4.
8. The site provides suitable habitat for nesting birds. Further recommendations are provided in section 5.5.
9. The site provides potentially suitable habitat for common reptile species and the desk study returned records of slow-worm and common lizard within two kilometres of the site. Further recommendations are provided in section 5.6.
10. Some recommendations to enhance the ecological value of the site are provided in section 5.7.

## **1.0 INTRODUCTION**

Lindsay Carrington Ecological Services Limited were commissioned by Mayer Brown Ltd to conduct an update ecological appraisal of a section of land adjacent to the northern side of Hazeley Road, Twyford, Winchester, Hampshire, SO21 1PX. A plan showing the site location is included as appendix I. This survey is required to support a planning application relating to flood alleviation works, which include diversion and extension of the existing roadside drainage ditch and improvements/upgrade of the existing drainage pipework here. The proposed works plans are included as appendix II.

An ecological appraisal is essentially a baseline habitat survey which is extended to include an assessment of a site's potential to support any legally protected, notable and/or invasive species. The survey is conducted with the objective of identifying any ecological constraints such as habitats of high nature conservation value, habitats that could potentially support legally protected or notable species, and the presence of invasive species.

Section 2 of the report provides some background information on legislative requirements and relevant policy. Section 3 details the methodologies adopted for the ecological surveys that were conducted and section 4 provides an account of the survey results. Section 5 provides information on the relevance of the results to the proposed development and makes recommendations for measures to mitigate and compensate for the effects on a particular habitat or species.

## 2.0 LEGISLATION

### 2.1 Legislation

The following legislation may be of relevance to the proposed works. Full details of statutory obligations with respect to biodiversity and the planning system can be found in DCLG Circular 06/2005.

- **The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019:** This transposes the EU Habitats Directive (Council Directive 92/43/EEC) into domestic law and ensures that the habitat and species protection and standards will continue to apply upon the UK's exit from the EU. The Regulations provide protection for a number of species including:
  - All species of bat
  - Hazel dormouse (*Muscardinus avellanarius*)
  - Otter (*Lutra lutra*)
  - Great crested newt (*Triturus cristatus*)

This legislation makes it an offence to deliberately capture, kill or injure individuals of these species listed on Schedule 2 and damage or destroy their breeding site or place of shelter. It is also illegal to deliberately disturb these species in such a way as to be likely to significantly affect: (i) the ability of any significant group of the species to survive, breed or rear or nurture their young; or (ii) the local distribution or abundance of the species<sup>1</sup>.

This legal protection means that where development has the potential to impact on bats, or other species of national interest<sup>2</sup>, the results of a protected species survey must be submitted with a planning application.

Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) are also protected under this legislation. These are a network of sites designated for supporting habitats or species of high nature conservation importance in the European context. Any

---

<sup>1</sup> The *Conservation of Habitats and Species (Amendments) (EU Exit) Regulations 2019* transposes the Conservation of Habitats and Species Regulations 2017 to allow the protection of habitat and species to continue unchanged once the UK leaves the EU. The 2017 Regulations consolidates the numerous amendments that were made to the Conservation (Natural Habitats, &c.) Regulations 1994. Of particular relevance are amendments made in August 2007 and January 2009 which increased the threshold of illegal levels of disturbance to European Protected Species (EPS). An offence is only committed if the deliberate disturbance would result in significant impacts to the EPS population. However, it should be noted that activities that cause low levels of disturbance to these species continue to constitute an offence under Section 9 of the Wildlife and Countryside Act (see below).

<sup>2</sup> Species of wild fauna and flora as listed in Annex II, IV or V to the Habitats Directive.

activity that has a detrimental effect on these European sites<sup>3</sup> is made an offence under the Regulations. Where a development is likely to have a significant impact on a European site, the Regulations require a rigorous assessment of the impacts, known as an Appropriate Assessment.

- **The Wildlife and Countryside Act 1981 (and amendments):** Protected fauna and flora are listed under Schedules 1, 5 & 8 of the Act. Species likely to be of relevance include:
  - All species of **bat**. It is an offence to intentionally or recklessly disturb any bat whilst it is occupying a roost or to intentionally or recklessly obstruct access to a bat roost.
  - All species of British **reptile** (in particular grass snake (*Natrix helvetica*), common lizard (*Zootoca vivipara*), adder (*Vipera berus*) and slow-worm (*Anguis fragilis*)). It is illegal to kill or injure these species.
  - **Great crested newt**. It is illegal to obstruct access to any structure or place which great crested newts use for shelter or protection or to disturb any great crested newt while it is using such a place.
  - **Water vole**. It is an offence to intentionally kill, injure or take water vole (*Arvicola amphibius*), intentionally or recklessly damage, destroy, obstruct access to water vole burrows or disturb them whilst in a burrow.

This Act also makes it an offence to intentionally kill, injure or take any wild bird or to take, damage or destroy their eggs and nests (whilst in use or being built). In addition, it is an offence to disturb any nesting bird listed on Schedule 1 or their young.

Schedule 9 of the Act lists those species for which it is an offence to cause their spread. Schedule 9 species that are most likely to be encountered are Japanese knotweed (*Fallopia japonica*) and New Zealand pigmyweed (*Crassula helmsii*).

Sites of Special Scientific Interest (SSSIs) are also protected under the Wildlife and Countryside Act 1981. These are a network of sites identified as being of national nature conservation importance and hence afforded legal protection.

National Nature Reserves (NNRs) are also protected under the Act (section 35 (1)) and established under the National Parks and Access to the Countryside Act 1949. These are nature reserves which are considered to be of national importance by the relevant statutory bodies i.e. Natural England, Natural resource Wales.

- **Natural Environment and Rural Communities Act (NERC) 2006:** This Act enforces a duty on the planning authority and local council to conserve biodiversity (section 40).

---

<sup>3</sup> Current reference to European sites, Special Area of Conservation and Special Protection Area are retained under the amendments to the *Conservation of Habitats and Species (Amendments) (EU Exit) Regulations 2019*.

Additionally, section 41 encourages the local councils to be aware of the species and habitats of ‘principal importance’ and to act accordingly to protect and manage these habitats and species.

- **The Countryside and Rights of Way Act 2000:** This Act strengthens nature conservation and wildlife protection. It places a duty on Government Ministers and Departments to conserve biological diversity, provides police with stronger powers relating to wildlife crimes, and improves protection and management of SSSIs.
- **The Protection of Badgers Act 1992:** This Act makes it an offence to wilfully take, injure or kill a badger (*Meles meles*); cruelly mistreat a badger; interfere with badger setts. A licence is required for work which may damage or disturb a sett.
- **Wild Mammals (Protection) Act 1996:** This Act provides protection for all wild animals from intentional acts of cruelty.
- **Hedgerow Regulations 1997:** These Regulations establish a set of criteria for assessing the importance of hedgerows. Where a hedgerow is deemed to be ‘important’ its removal is prohibited without consent from the local Planning Authority

## **2.2 Policy**

The following policy is of relevance to the proposed works:

- **National Planning Policy Framework (NPPF):** This sets out the Government’s vision for biodiversity in England with the broad aim that planning, construction, development and regeneration should maintain and enhance, restore or add to biodiversity and geological conservation interests. NPPF (2018) includes sections on legally protected species and sites in section 15 (2) (see section 2.1).
- **Local Sites (including Sites of Importance for Nature Conservation (SINCs), Local Nature Reserves (LNR), and Biological Notification Sites (BNSs)/County Wildlife Sites (CWSs)):** These are a network of sites designated for their nature conservation importance in a local context. Although they are not afforded legal protection they contribute towards local and national biodiversity. Where such development is permitted, the local planning authority will use conditions and/or planning obligations to minimise the damage and to provide compensatory and site management measures where appropriate.
- **Natural England Protected Species Standing Advice:** The standing advice is used by local authorities as a fall back position when in pre-application consultation or during the determination period to define habitat and species survey efforts and mitigation proposals.

- **Biodiversity Action Plans (BAPs):** BAPs set out policy for protecting and restoring priority species and habitats as part of the UK's response as signatories to the Convention on Biological Diversity. BAPs operate at both a national and local level with priority species and habitats identified at a national level and a series of Local BAPs that identify ecological features of particular importance to a particular area of the country. The requirement to consider and contribute towards BAP targets was strengthened through the Countryside and Rights of Way Act 2000. Habitat and Species Action Plans that are likely to be of relevance include:
  - Brown long-eared bat (*Plecotus auritus*) (UK BAP)
  - Soprano pipistrelle (*Pipistrellus pygmaeus*) (UK BAP)
  - House sparrow (*Passer domesticus*) (UKBAP)
  - Bullfinch (*Pyrrhula pyrrhula*) (UKBAP)
  - Starling (*Sturnus vulgaris*) (UKBAP)
  - Dunnock (*Prunella modularis*) (UKBAP)

## 3.0 METHODOLOGY

### 3.1 *Field study*

The standard phase 1 habitat survey methodology (JNCC, 2010) was adopted whereby habitats are mapped using colour codes. A detailed walkover survey was undertaken on the 2<sup>nd</sup> July 2018 by ecologists William Davis and Elen Lesourd, directly searching for legally protected and invasive species of plant and categorising any habitats of ecological value that were encountered. A general description of the vegetation was also noted, listing species encountered and scoring their abundance using the DAFOR scale shown below. An update walkover survey was undertaken by ecologists Andrew Heideman and Lissie Hastie on 13<sup>th</sup> May 2020.

D	Dominant
A	Abundant
F	Frequent
O	Occasional
R	Rare
L	Local (used as a prefix to any of the above)

#### *Hedgerow Regulations Assessment*

A hedgerow assessment was conducted by ecologists Andrew Heideman and Lissie Hastie on 13th May 2020 to determine whether any of the hedgerows on site may qualify as 'Important'. The hedgerows were assessed in relation to the various criteria used to classify 'Important' hedgerows, as stated within the Hedgerow Regulations 1997. A summary of qualifying hedgerows and additional features is presented in table 1 below.

**Table 1. Hedgerows qualifying as 'Important' under the Hedgerow Regulations 1997 and a summary of additional features**

Summary of 'Important' hedgerows
<u>Hedgerows that are at least 20 metres in length, have existed for 30 years or more, and either support species protected under the Wildlife and Countryside Act 1981, or meet the following criteria:</u>
<u>Hedgerow must include:</u>
(a) at least 7 woody species;
(b) at least 6 woody species and has associated with it at least 3 additional features.
(c) at least 6 woody species, including one of the following -
black-poplar tree ( <i>Populus nigra</i> ssp <i>betulifolia</i> );
large-leaved lime ( <i>Tilia platyphyllos</i> );
small-leaved lime ( <i>Tilia cordata</i> );
wild service-tree ( <i>Sorbus torminalis</i> ); or

(d) at least 5 woody species and has associated with it at least 4 additional features.

Or hedgerow must:

be adjacent to a bridleway or footpath, a road used as a public path, or a byway open to all traffic, and include at least 4 woody species, and at least 2 additional features.

**Additional features**

- a bank or wall which supports the hedgerow along at least one half of its length.
- gaps which in aggregate do not exceed 10% of the length of the hedgerow.
- where the length of the hedgerow does not exceed 50 metres, at least one standard tree.
- where the length of the hedgerow exceeds 50 metres but does not exceed 100 metres, at least 2 standard trees.
- where the length of the hedgerow exceeds 100 metres, such number of standard trees (within any part of its length) as would when averaged over its total length amount to at least one for each 50 metres.
- at least 3 woodland (ground flora) species within one metre, in any direction, of the outermost edges of the hedgerow.
- a ditch along at least one half of the length of the hedgerow.
- hedgerow connections scoring 4 points or more (a connection with another hedgerow scores one point and a connection with a pond or a woodland in which the majority of trees are broad-leaved trees scores 2 points; and a hedgerow is connected with something not only if it meets it but also if it has a point within 10 metres of it and would meet it if the line of the hedgerow continued).
- a parallel hedge within 15 metres of the hedgerow.
- The hedgerow is adjacent to a bridleway or public footpath, or a byway open to all traffic.

For each individual hedgerow assessment, the length of the hedgerow was measured and the number of woody species and any additional features recorded. For woody species counts the following guidelines were applied (as stated within the Hedgerow Regulations 1997):

(a) where the length of the hedgerow does not exceed 30 metres, count the number of woody species present in the hedgerow.

(b) where the length of the hedgerow exceeds 30 metres, but does not exceed 100 metres, count the number of woody species present in the central stretch of 30 metres.

(c) where the length of the hedgerow exceeds 100 metres, but does not exceed 200 metres, count the number of woody species present in the central stretch of 30 metres within each half of the hedgerow and divide the aggregate by two.

(d) where the length of the hedgerow exceeds 200 metres, count the number of woody species present in the central stretch of 30 metres within each third of the hedgerow and divide the aggregate by three.

### ***Badgers***

A direct search was undertaken for signs of badger. Signs of badger may include setts, dung pits, latrines, paths or hairs caught on fences and vegetation. Any setts encountered were classified according to the number of entrances and the extent of their use.

### ***Bats***

Potential for the site to support roosting, foraging and commuting bats was assessed by ecologists Andrew Heideman and Lissie Hastie on 13th May 2020 in accordance with the Bat Conservation Trust (BCT) *Bat Surveys for Professional Ecologists Good Practice Guidelines* (Collins *et al.*, 2016).

### **Trees**

Bats often roost in trees and features such as old woodpecker holes, splits, cavities, rot holes, loose or flaking bark and ivy creepers will all provide potential roosting sites. Any trees present on site were therefore assessed for their potential to support roosting bats by searching for such features. The presence of roosting bats can be spotted through signs such as accumulations of moth or butterfly wings, staining, bat droppings, or bats themselves. The absence of these cannot, however, be treated as conclusive evidence that bats are not present, and therefore an assessment was made of the potential of the trees to support bats based on the scale presented in table 2 below:

**Table 2: Criteria for assessing bat roosting potential of buildings and trees**

<b>Confirmed Roost</b>	Evidence of bat occupation found
<b>High Roosting Potential</b>	With significant roosting potential, either because they contain a large number of suitable features or those features present appear optimal
<b>Medium Roosting Potential</b>	Features with moderate roosting potential, with roosting features appearing less suitable
<b>Low or Negligible Roosting Potential</b>	Trees with few, if any, features suitable for roosting

### **Foraging/commuting habitat**

The habitat on the site was assessed for its potential to support foraging and commuting bat populations, in accordance with the Bat Conservation Trust (BCT) *Bat Surveys for Professional Ecologists Good Practice Guidelines* (Collins *et al.*, 2016). Bats navigate using linear features in the landscape, such as hedgerows, woodland edges and water courses. Habitats including grasslands, scrub, hedgerows, woodlands and watercourses all provide important foraging habitat which supports populations of various bat species, including rare Annex II species.

### ***Great crested newt***

Suitable breeding ponds are essential to support populations of great crested newt although they actually only spend a relatively short period of the year in the ponds during the spring for breeding. The remainder of the year is spent in suitable 'foraging' terrestrial habitat such as tall grassland and woodland. During the winter, the great crested newt hibernates, often amongst the roots of trees and scrub or in places such as piles of rubble, amongst foundations of buildings or under fallen trees and logs.

Great crested newts are known to forage up to at least five hundred metres from their breeding pond and suitable habitats that fall within two hundred and fifty metres must be considered even in situations where the breeding pond itself will not be affected. The site and surrounding area were therefore assessed for the presence of ponds that may provide suitable breeding habitat for great crested newt. Habitats within the site were also assessed for their suitability as terrestrial great crested newt habitat.

### ***Hazel dormouse***

The habitat on the site was assessed for its potential to support dormice, which are found in habitats such as woodlands, scrub and hedgerows with good connectivity and suitable food plants. A visual inspection for their distinctive nests was undertaken. Satellite images were used to assess the connectivity of any suitable habitat present on the site to other areas of woodland and hedgerow networks.

### ***Reptiles***

Reptiles are widespread in habitats, such as scrub, rough grassland and hedgerows, which provide cover, foraging opportunities and basking sites. They also have an affinity with scattered debris, including building materials and log/brushwood piles, which can provide suitable refugia and hibernacula. The site was assessed for its potential to support native species of reptile.

## 4.0 RESULTS

### 4.1 Desk study

#### *Statutory and non-statutory sites*

Table 3 below lists statutory designated sites for nature conservation located within a five kilometre radius and non-statutory designated sites located within a two kilometre radius of the site off Hazeley Road.

**Table 3: Statutory designated sites within five kilometres and non-statutory designated sites within two kilometres**

Site name	Conservation status	Distance from site (km)	Size (Ha)	Habitat description
River Itchen	SAC <sup>4</sup>	0.5 west	303.99	The SAC was selected for the annex 1 habitat "Water courses of plain to montane levels with the Ranunculion fluitantis and Callitriche-Batrachion vegetation" as well as the populations of Southern Damselfly ( <i>Coenagrion mercuriale</i> ) and bullhead ( <i>Cottus gobio</i> ). White clawed crayfish ( <i>Austropotamobius pallipes</i> ), brook lamprey ( <i>Lampetra planeri</i> ), atlantic salmon ( <i>Salmo salar</i> ) and Otter ( <i>Lutra lutra</i> ) are also present, although these are not primary reasons for the selection of the site.
	SSSI <sup>5</sup>	0.5 west	748.50	The River Itchen is a chalk river that runs approximately 42 km in length. The riparian habitat includes fen meadow, flood pasture and swamp. The site is noted for its significant populations of the nationally rare southern damselfly ( <i>Coenagrion mercuriale</i> ) and bullhead ( <i>Cottus gobio</i> ), and qualifying species white-clawed crayfish ( <i>Austropotamobius pallipes</i> ), brook lamprey ( <i>Lampetra planeri</i> ), Atlantic salmon ( <i>Salmo salar</i> ) and otter ( <i>Lutra lutra</i> ).

---

<sup>4</sup> SAC: Special Area of Conservation

<sup>5</sup> SSSI: Site of Special Scientific Interest

Site name	Conservation status	Distance from site (km)	Size (Ha)	Habitat description
St. Catherine's Hill	SSSI	2.5 north	43	The Site of Special Scientific Interest comprises chalk grassland scrub occupying the spur of St. Catherine's Hill and an adjoining dry valley. The site supports a diverse range of plant communities.
Shawford Down	LNR <sup>6</sup>	1.2 west	19.65	Chalk grassland grazed by highland cattle. Notable species include chalk down land plants and butterflies.
Cockscomb Hill	SINC	0.7 south east	4.27	Agriculturally unimproved grassland with notable species including chalk milkwort ( <i>Polygala calcarea</i> )
Twyford Waterworks Meadows	SINC <sup>7</sup>	0.8 east	1.47	Agriculturally unimproved grassland.
Cockscomb Down	SINC	0.9 south east	16.84	Agriculturally unimproved grassland hound's tongue ( <i>Cynoglossum officinale</i> ).
Twyford Mead Meadow	SINC	1.0 north	2.88	Water meadow with quality characteristics of species present in unimproved habitats. Notable species include river water-dropwort ( <i>Oenanthe fluviatilis</i> ), sea knotgrass ( <i>Polygonum maritimum</i> ) and stream water-crowfoot ( <i>Ranunculus penicillatus</i> agg.).
Twyford Reservoir	SINC	1.0 south east	1.47	Agriculturally unimproved grassland with notable species including sainfoin ( <i>Onobrychis viciifolia</i> ).
Gabriel's Copse	SINC	1.0 south east	10.76	Ancient semi-natural woodlands.
Shawford Down	SINC	1.2 west	19.19	Grassland which has been recently impoverished but could show signs of recovery to unimproved state. Notable species include basil thyme ( <i>Clinopodium acinos</i> ), corn cleavers ( <i>Galium tricornutum</i> ), chalkhill blue ( <i>Polyommatus coridon</i> ), sweet briar ( <i>Rosa rubiginosa</i> ) and striped lychnis ( <i>Shargacucullia lychnitis</i> ).

<sup>6</sup> LNR: Local Nature Reserve

<sup>7</sup> SINC: Site of Importance for Nature Conservation

Site name	Conservation status	Distance from site (km)	Size (Ha)	Habitat description
B3354/B335 Main Road	SINC/ RVEI <sup>8</sup>	1.2 south	59 metres in length	Triangle by junction of B3354 and B335 near Twyford. Notable species of the lowland meadow/marsh flora includes dittander CI ( <i>Lepidium latifolium</i> ).
Hazeley Copse	SINC	1.2 east	4.16	Ancient semi-natural woodlands.
The Malms Down	SINC	1.3 west	0.62	Grassland which has been recently impoverished but could show signs of recovery to unimproved state.
Cockscomb Hill Copse	SINC	1.4 south east	4.18	Ancient semi-natural woodlands.
Roundbushes Copse	SINC	1.5 south east	2.02	Ancient semi-natural woodlands.
Sparrowgrove Copse	SINC	1.8 south west	4.88	Ancient semi-natural woodlands.
Hockley Golf Course	SINC	1.7 north	79.11	Range of grassland characteristics, with potential for quality unimproved habitat throughout.
Taylor's Copse	SINC	1.8 south	4.73	Ancient semi-natural woodlands.
Warners Farm Down	SINC	1.9 west	0.44	Agriculturally unimproved grassland.
Oakwood Copse	SINC	2.0 south west	3.74	Ancient semi-natural woodlands.
Hazeley Down	SINC	2.0 east	0.25	Agriculturally unimproved grassland.
A3090 Hockley Link Road	RVEI	2.0 north	320 metres in length	Both sides of the A3090 east of the Hockley link roundabout. Notable species of the chalk flora include common spotted-orchid ( <i>Dactylorhiza fuchsii</i> ), Pyramidal orchid ( <i>Anacamptis pyramidalis</i> ) and bee orchid ( <i>Ophrys apifera</i> ).

*The proposed development is located within 500 metres of the River Itchen SSSI/SAC. Mitigation to prevent impacts to this site is presented in section 5.1.*

### ***Protected, notable and invasive species records***

Records of protected, notable and invasive species within a two kilometre radius of the site were provided by HBIC and are presented in table 4 below.

<sup>8</sup> RVEI: Road Verge of Ecological Importance

**Table 4: Protected, notable and invasive species within a two kilometre radius**

Common Name	Scientific name	Status	Dates
<b><i>Amphibians and reptiles</i></b>			
Slow worm	<i>Anguis fragilis</i>	Schedule 5 WCA <sup>9</sup> , UKBAP <sup>10</sup>	11 records dated between 2008 and 2013.
Common toad	<i>Bufo bufo</i>	Schedule 5 WCA	1 record dated 2012.
Great crested newt	<i>Triturus cristatus</i>	Annex II <sup>11</sup> , Schedule 2 Habs Regs <sup>12</sup> , Schedule 5 WCA, UKBAP	3 records dated 2012.
Common lizard	<i>Zootoca vivipara</i>	Schedule 5 WCA, UKBAP	1 record dated 2010.
<b><i>Birds</i></b>			
Cuckoo	<i>Cuculus canorus</i>	UK BAP, Red List BoCC <sup>13</sup>	1 record dated 2008.
Reed bunting	<i>Emberiza schoeniclus</i>	UK BAP, Amber List BoCC	27 records dated between 2009 and 2018.
Linnet	<i>Linaria cannabina</i>	UK BAP, Red List BoCC	5 records dated between 2005 and 2017.
Spotted flycatcher	<i>Muscicapa striata</i>	UK BAP, Red List BoCC	24 records dated between 2005 and 2017.
House sparrow	<i>Passer domesticus</i>	UK BAP, Red List BoCC	5 records dated 2011.
Grey partridge	<i>Perdix perdix</i>	UK BAP, Red List BoCC	1 record dated 2018.
Woodcock	<i>Scolopax rusticola</i>	Red List BoCC	2 records dated between 2016 and 2017.
Turtle dove	<i>Streptopelia turtur</i>	UK BAP, Red List BoCC	2 records dated between 2006 and 2014.
Starling	<i>Sturnus vulgaris</i>	UK BAP, Red List BoCC	3 records dated between 2010 and 2018.
Redwing	<i>Turdus iliacus</i>	Schedule 1 WCA, Red List BoCC	21 records dated between 2005 to 2018.
Song thrush	<i>Turdus philomelos</i>	UK BAP, Red List BoCC	15 records dated between 2011 and 2013.
Fieldfare	<i>Turdus pilaris</i>	Schedule 1 WCA, Red List BoCC	8 records dated between 2004 and 2017.
Mistle thrush	<i>Turdus viscivorus</i>	Red List BoCC	2 records dated 2011.
Lesser redpoll	<i>Acanthis cabaret</i>	BoCC, BAP	2 records dated 2012.
Marsh tit	<i>Poecile palustris</i>	Red list, BAP, BoCC, HoS	8 records dated between 2005 and 2017.

<sup>9</sup> WCA: The Wildlife and Countryside Act 1981 (as amended)

<sup>10</sup> UKBAP: UK Biodiversity Action Plan

<sup>11</sup> Annex II: Annex II of the EC Habitats Directive

<sup>12</sup> Habs Regs: The Conservation of Habitats and Species Regulations 2019

<sup>13</sup> BoCC: Birds of Conservation Concern

Common Name	Scientific name	Status	Dates
Firecrest	<i>Phoenicurus ochruros</i>	Schedule 1, HoS	5 records dated 2017.
Whinchatt	<i>Saxicola rubetra</i>	BoCC Red List	6 records dated between 2004 and 2018.
<b>Mammals – bats</b>			
Western barbastelle	<i>Barbastella barbastellus</i>	Schedule 2 Habs Regs, Schedule 5 WCA, UK BAP	2 records dated 2011.
Serotine	<i>Eptesicus serotinus</i>	Schedule 2 Habs Regs, Schedule 5 WCA	26 records dated between 1984 and 2018.
Myotis bat species	<i>Myotis sp.</i>	Schedule 2 Habs Regs, Schedule 5 WCA	3 records dated 2017.
Brandt's bat	<i>Myotis brandtii</i>	Schedule 2 Habs Regs, Schedule 5 WCA	1 record dated 2018.
Daubenton's bat	<i>Myotis daubentonii</i>	Schedule 2 Habs Regs, Schedule 5 WCA	25 records dated between 1997 and 2018.
Whiskered Bat	<i>Myotis mystacinus</i>	Schedule 2 Habs Regs, Schedule 5 WCA	1 record dated 2011.
Natterer's bat	<i>Myotis nattereri</i>	Schedule 2 Habs Regs, Schedule 5 WCA	1 record dated 2005.
Noctule	<i>Nyctalus noctula</i>	Schedule 2 Habs Regs, Schedule 5 WCA, UK BAP	18 records dated between 1987 and 2017.
Nathusius's pipistrelle	<i>Pipistrellus nathusii</i>	Schedule 2 Habs Regs, Schedule 5 WCA	1 record dated 2018.
Common pipistrelle	<i>Pipistrellus pipistrellus</i>	Schedule 2 Habs Regs, Schedule 5 WCA	45 records dated between 2008 and 2018.
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>	Schedule 2 Habs Regs, Schedule 5 WCA, UK BAP	30 records dated between 2008 and 2017.
Pipistrelle bat species	<i>Pipistrellus sp.</i>	Schedule 2 Habs Regs, Schedule 5 WCA	45 records dated between 2008 and 2018.
Long-eared bat species	<i>Plecotus sp.</i>	Schedule 2 Habs Regs, Schedule 5 WCA	8 records dated between 2008 and 2018.
Brown long eared bat	<i>Plecotus auritus</i>	Schedule 2 Habs Regs, Schedule 5 WCA, UK BAP	9 records between 2003 and 2017.

Common Name	Scientific name	Status	Dates
<b><i>Mammals – Terrestrial (non-bats)</i></b>			
Western European hedgehog	<i>Erinaceus europaeus</i>	UK BAP	4 records dated between 2018 and 2019.
Brown Hare	<i>Lepus europaeus</i>	UK BAP	1 recorded dated 2012.
Eurasian badger	<i>Meles meles</i>	PBA <sup>14</sup>	3 records dated between 2009 and 2018.
Harvest mouse	<i>Micromys minutus</i>	UK BAP	1 record dated 2009.
Hazel dormouse	<i>Muscardinus avellanarius</i>	Schedule 2 Habs Regs, Schedule 5 WCA, UK BAP	5 records dated between 2012 and 2019.
<b><i>Invertebrates-Lepidoptera</i></b>			
Stag beetle	<i>Lucanus cervus</i>	Schedule 5 WCA, UK BAP	6 records dated between 2002 and 2006.

*These records of protected, notable and invasive species in the vicinity of the site increase the likelihood of them being present where suitable habitat is identified during the field survey.*

## **4.2 Field survey**

### **4.2.1 Vegetation**

The accompanying phase 1 habitat map provided as appendix III depicts the habitats encountered and highlights areas of particular interest with target notes. Photographs of the habitats and features on site are included as appendix IV.

The site comprises a small area of land adjacent to the north of Hazeley Road which encompasses strips of tall ruderal vegetation, a drainage ditch, a section of native hedgerow and a low number of scattered trees. Descriptions of the habitats encountered during the survey are provided below:

#### ***Hardstanding (Target note 1)***

There is a public roadside walkway along the southern boundary of the site which is composed of concrete and tarmac hardstanding.

*This area is of negligible ecological value and considered unsuitable to support any protected or notable species. No further action is required.*

#### ***Tall ruderal vegetation (Target note 2)***

There are narrow strips of tall ruderal vegetation present alongside the drainage ditch and hedgerow. This vegetation mostly comprises a mixture of coarse grasses, such as false oat-

<sup>14</sup> PBA: Protection of Badgers Act

grass (*Arrhenatherum elatius*), cock's-foot (*Dactylis glomerata*) and barren brome (*Anisantha sterilis*), and vigorous-growing common forbs, such as creeping cinquefoil (*Potentilla reptans*), common nettle (*Urtica dioica*) and cleavers (*Galium aparine*). A full species list is provided in table 5 below.

**Table 5: Species recorded within the tall ruderal vegetation**

Common name	Latin name	Abundance	Status
<b>Grasses, sedges and rushes</b>			
False oat-grass	<i>Arrhenatherum elatius</i>	A-F	Common in meadows and on road verges
Barren brome	<i>Bromus sterilis</i>	D-A	Common & widespread
Cock's-foot	<i>Dactylis glomerata</i>	O	Common & widespread
Meadow-grass	<i>Poa sp.</i>	O	Common & widespread
<b>Herbaceous species</b>			
Lords-and-ladies	<i>Arum maculatum</i>	R	Common and widespread
Spear thistle	<i>Cirsium vulgare</i>	R	Common and Widespread
Field bindweed	<i>Convolvulus arvensis</i>	F-O	Common and widespread
Great willowherb	<i>Epilobium hirsutum</i>	LO-R	Common & widespread
Cleavers	<i>Galium aparine</i>	F	Common & widespread
Ground-ivy	<i>Glechoma hederacea</i>	O-R	Common and Widespread
Hogweed	<i>Heracleum sphondylium</i>	O	Common and widespread
Stinking iris	<i>Iris foetidissima</i>	R	Occurs in shaded habitats, mostly on calcareous soils.
White dead-nettle	<i>Lamium album</i>	O-R	Common and widespread
Creeping cinquefoil	<i>Potentilla reptans</i>	F-O	Common and widespread
Bramble	<i>Rubus fruticosus</i> agg.	O	Common and widespread
Dock	<i>Rumex sp.</i>	O-R	Common & widespread
Tansy	<i>Tanacetum vulgare</i>	R	Common and widespread
Dandelion	<i>Taraxacum</i> agg.	R	Common and widespread
Goats beard	<i>Tragopogon pratensis</i>	R	Common in grasslands, roadsides and wasteland.
Common nettle	<i>Urtica dioica</i>	F	Common and widespread

*The tall ruderal vegetation on site is limited in extent and comprises common/widespread species, this habitat is considered to be of limited to negligible botanical value and no further action is required. The tall ruderal vegetation on site could potentially support badgers, foraging/commuting bats, ground-nesting birds, great crested newt and reptiles, these species are discussed further in section 4.2.2.*

### **Drainage ditch (Target note 3)**

There is a drainage ditch, approximately 0.75 metres in depth and 0.6 metres in width, that runs parallel to Hazeley Road alongside the native hedgerow. At the time of the survey this ditch was completely dry, most likely due to the period of warm weather conditions at that time. The ditch channel and banks are composed of bare earth and were mostly

unvegetated. Tall ruderal and hedgerow field layer vegetation are present on either sides of the ditch.

*The ditch on site comprises a mostly bare earth, unvegetated drainage channel which is considered to be of negligible ecological value. The ditch is considered unsuitable to support any protected or notable species due its lack of any vegetation. No further action is required.*

***Native hedgerow (Target note 4)***

The site encompasses a section of a species-rich native hedgerow that is approximately 1.5 to 2 metres in average height and 2 to 2.5 metres in average width. The hedgerow comprises a good variety of native woody species and a moderately species-rich field layer. A low number of mature field maple (*Acer campestre*) standards were also present within this hedgerow section. The native hedgerow on site is summarised in table 6 below. The results of the Hedgerow Regulations assessment are provided in table 7 below.

**Table 6: Native hedgerows recorded on site**

Key (see Phase 1 map)	Woody species	Field layer	BAP status (at least 80% UK native woody species)	General description
H1	Field maple ( <i>Acer campestre</i> ) (including mature standard trees) Sycamore ( <i>Acer psuedoplatanus</i> ) Dogwood ( <i>Cornus sanguinea</i> ) Hawthorn ( <i>Crataegus monogyna</i> ) Wild privet ( <i>Ligustrum vulgare</i> ) Blackthorn ( <i>Prunus spinosa</i> ) Rose ( <i>Rosa sp.</i> ) Elder ( <i>Sambucus nigra</i> ) English elm ( <i>Ulmus procera</i> )	Barren brome ( <i>Anisantha sterilis</i> ) Cow parsley ( <i>Anthriscus sylvestris</i> ) Lords and ladies ( <i>Arum maculatum</i> ) Spear thistle ( <i>Cirsium vulgare</i> ) Lesser celandine ( <i>Ficaria verna</i> ) Cleavers ( <i>Galium aparine</i> ) Wood avens ( <i>Geum urbanum</i> ) Ground Ivy ( <i>Glechoma hederacea</i> ) Ivy ( <i>Hedera helix</i> ) Meadow-grass ( <i>Poa sp.</i> ) Bramble ( <i>Rubus fruticosus</i> agg.) Common nettle ( <i>Urtica dioica</i> )	Yes	A native hedgerow that is well-established and species-rich. Approximately 1.5 to 2 metres in height and 2 to 2.5 metres in width. A low number of mature standard field maple trees present. The hedgerow appears to be maintained on a regular basis via flailing.

*The native hedgerow on site comprises > 80% of at least one woody UK native species which qualifies it as UK BAP Hedgerow habitat. Further recommendations are provided in section 5.2. The hedgerow on site could potentially support badger, foraging/commuting bats, foraging/nesting birds, dormouse, reptiles and great crested newt, these species are discussed further in section 4.2.2.*

**Table 7: Results of the Hedgerow Regulations assessment**

Hedge number	Hedge length (metres)	Woody species recorded in hedgerow	Average/total number of woody species recorded in surveyed sections	Hedgerow adjacent to a bridleway or footpath, a road used as a public path, or a byway open to all traffic	Additional features	Total number of additional features	Qualifies as 'Important' under the Hedgerow Regulations 1997 (Yes/No)
H1	425	Field maple ( <i>Acer campestre</i> ) Dogwood ( <i>Cornus sanguinea</i> ) Hazel ( <i>Corylus avellana</i> ) Hawthorn ( <i>Crataegus monogyna</i> ) Ash ( <i>Fraxinus excelsior</i> ) Wild privet ( <i>Ligustrum vulgare</i> ) Blackthorn ( <i>Prunus spinosa</i> ) Elder ( <i>Sambucus nigra</i> ) English elm ( <i>Ulmus procera</i> )	6	No	<ul style="list-style-type: none"> <li>gaps present comprise less than 10% of the hedgerow length.</li> <li>ditch present along at least one half of the length of the hedgerow.</li> <li>a parallel hedgerow present within 15 metres.</li> </ul>	3	Yes

*The hedgerow on site qualifies as 'Important' under the hedgerow regulations 1997. Further recommendations are provided in section 5.2.*

### ***Scattered trees (Target note 5)***

A total of three scattered trees were recorded at the eastern end of the site, these include a semi-mature specimen of field maple and two young specimens of whitebeam (*Sorbus aria* agg.).

*The scattered trees on site are considered to be of limited ecological value as they only comprise young specimens of common/widespread species. No further action is required. The scattered trees on site could potentially support foraging and commuting bats, and nesting birds, these species are discussed further in section 4.2.2.*

## **4.2.2 Protected species assessment**

### ***Badger***

The tall ruderal vegetation and native hedgerow on site provide potentially suitable habitat for badger, with opportunities for foraging and sett building. No badger setts or evidence of badger activity was identified on site during the walkover survey. The desk study returned three records of badger within two kilometres of the site.

*Precautionary measures to safeguard badgers and other fauna from harm during the works are outlined in section 5.3.*

### ***Bats***

#### Trees

No trees with potential to support roosting bats were identified during the walkover survey of the site.

*No further action is required.*

#### Foraging and commuting habitat

The habitats on site, including the native hedgerow, scattered trees and tall ruderal vegetation, are considered to be of 'Low' to 'Moderate' value for foraging and commuting bats (Collins, 2016). These habitats form part of linear field boundary and are therefore considered to be of potential value as a commuting route for bats as well as providing a foraging resource. However, the works site only forms a small/restricted section of this hedgerow/boundary feature and the proposed works will be temporary and small-scale with the habitats being replaced and enhanced, as detailed in sections 5.2.2 and 5.7. Taking these factors into account, it is considered highly unlikely that foraging and commuting bats will be significantly affected by the proposed works.

*No further action is required.*

### ***Great crested newt***

#### Aquatic habitat

There are no ponds or other waterbodies on site which could potentially provide suitable breeding habitat for great crested newt. A review of online mapping identified no further potentially suitable waterbodies within a 500 metre radius of the site.

#### Terrestrial habitat

The tall ruderal vegetation and native hedgerow on site provide suitable terrestrial habitat for great crested newt, with foraging opportunities and potential refugia/hibernacula.

The desk study returned three records of great crested newt within two kilometres of the site, this indicates that the species is potentially present within the wider local area.

*Given the absence of any potentially suitable aquatic habitat on site or within the surrounding locality (500 metre typical dispersal range), it is therefore considered that the species is likely absent from the proposed works site. No further action is required.*

### ***Hazel dormouse***

The native hedgerow on site provides suitable habitat for dormice, including a variety of food plants and flowering shrubs, such as bramble (*Rubus fruticosus* agg), blackthorn (*Prunus spinosa*), elder (*Sambucus nigra*) and hawthorn (*Crataegus monogyna*), and dense woody vegetation growth suitable for constructing nests in. The site is also reasonably well connected with further suitable habitat for dormouse within the locality, including hedgerow networks, scrub and stands of broad-leaved woodland. No evidence of dormice, such as opened hazel nuts or nests, was recorded on site during the initial walkover survey. The desk study returned five records of dormice within two kilometres of the site.

*Further recommendations are provided in section 5.4.*

### ***Nesting birds***

The native hedgerow, scattered trees and tall ruderal vegetation on site provide potentially suitable nesting habitat for a range of common bird species, including both arboreal and ground nesting species.

*Further recommendations are provided in section 5.5.*

### ***Reptiles***

The tall ruderal vegetation and native hedgerow on site provide potentially suitable habitat for common reptile species such as slow-worm, common lizard and grass snake with some foraging opportunities and potential refugia/hibernacula. The desk study returned 11 records of slow-worm and one record of common lizard within two

kilometres of the site. The site is reasonably well connected with further suitable habitat within the surrounding area, including mixed lowland farmland with hedgerow networks, scrub and stands of broadleaved woodland.

*Further recommendations are provided in section 5.6.*

## **5.0 CONCLUSIONS AND RECOMMENDATIONS**

The site encompasses strips of tall ruderal vegetation, a drainage ditch, a section of native hedgerow and a low number of scattered trees. The site is considered to be mostly of low ecological value, the native hedgerow is considered the most valuable habitat feature present. The following potential impacts to designated sites, habitats and species are likely to occur in the absence of mitigation:

- There is a risk of indirect pollution to the River Itchen SAC/SSSI occurring during the proposed works which could result in degradation of this designated site.
- The proposed works could result in the loss of a section of the existing native hedgerow, damage/degradation of the existing native hedgerow on site could also occur.
- The proposed works could result in the loss and/or degradation of scattered trees.
- There is potential that badgers could be harmed during the proposed works.
- There is potential for disturbance to nesting birds and/or damage/destruction of individual birds' nests during the proposed works.
- There is potential for disturbance, injury and/or killing of dormice and loss/degradation of suitable habitat for dormice.
- There is potential for injury and/or killing of reptiles and loss/degradation of suitable habitat for reptiles.

### **5.1 Designated sites**

#### **5.1.1 River Itchen**

The River Itchen SAC/SSSI is situated 0.5 kilometres to the west of the works site. The proposed works will ensure that there is an increased capacity to retain surface water runoff which will in turn reduce the level of discharge into the River Itchen. Therefore, the proposed works will benefit this designated site rather than negatively impact it.

As the drainage ditches are located next to a highway they will also capture any pollutants that run off from the local area. It is therefore advised that some form of suitable pollution capture system is installed to ensure that in the event of a major pollution incident, such as a vehicle accident or sewage leak, no pollutants enter the River Itchen system.

It is considered that there is a low risk of indirect pollution to the River Itchen system occurring during the proposed works.

#### **5.1.2 Mitigation**

During the works a Construction Method Statement (CMS) will be implemented. The following matters will be addressed in the CMS:

- Details of how materials / chemicals will be stored and controlled on-site to avoid pollution and siltation (for example, all plant will be fitted with drip trays in order to avoid potential pollution incidents and no re-fuelling will take place on the site).
- Details on the proposed construction methodology including factors such as construction access, methods of construction, timing of work and working hours.
- Industry standard dust suppression methodology.

## **5.2 Native hedgerows**

### **5.2.1 Summary of findings**

The site encompasses a section of a species-rich native hedgerow which comprises a good variety of native woody species and a moderately species-rich field layer. A low number of mature field maple standards were also present within this hedgerow section. The native hedgerow qualifies as UK BAP Hedgerow habitat and as 'Important' under the hedgerow regulations 1997.

The development proposals involve the relocation/reinstatement of this hedgerow section approximately 3 to 4 metres to the north of its current position in order to accommodate the improved drainage system layout.

### **5.2.2 Mitigation**

Given the hedgerow on site does qualify as 'Important' under the Hedgerow Regulations, written permission from Winchester City Council will therefore need to be obtained in order to undertake the proposed relocation/reinstatement of this hedgerow section.

In regards to the proposed relocation/reinstatement of the hedgerow section, two approaches are recommended here. The ideal approach will be to translocate the existing hedgerow to its proposed new position and this would result in minimal/temporary ecological impacts only. However, if this is not feasible due to access or financial constraints, then a second approach will be to clear the existing hedgerow section and plant a new species-rich native hedgerow at the proposed new location. Details of the two approaches are outlined below.

#### *Hedgerow translocation*

The following methodology below has been adapted from Monmouthshire County Council (2011) and Devon Hedge Group (2020). These hedgerow translocation works should be completed within the month of October to avoid conflict with the nesting bird season and hibernation periods for dormice and reptiles. October is also considered a suitable month for shrub and tree translocations with a greater chance of successful re-establishment.

Step A - Preparation of the receptor site

Excavation of a receptor trench at the proposed translocation zone should be twice the width of the lifting bucket plus 50 centimetres, to a depth of 60 centimetres. Soil from the trench should be placed on an agreed area with topsoil and subsoil stored in separate piles. Substrate at the bottom of the trench should also be loosened with an excavator bucket to a depth of at least 25 centimetres.

#### Step B - Preparation of the donor site

- Smaller shrubs, peripheral areas of suckering blackthorn and bramble which will not be translocated should be cut to ground level to increase visibility.
- The hedgerow should be flailed and cut (including large trees) to a height of 50 centimetres. Cutting should be done with a circular saw, hedge cutter or similar so as to ensure cuts are clean and not torn. If necessary, reduce dimensions of any shrubs which have horizontal sections (which have been layered in the past) so as to remove the horizontal growth.
- The arisings should either be burnt or retained to create habitat piles for insertion into the translocated hedge (including stumps and dead wood).

#### Step C - Shrub lifting and translocation

- A machine with a cutting tool should be used to cut a slit 60 centimetres deep to sever the roots and permit the root balls to be lifted cleanly. This cut should be positioned so as to allow the shrub and root ball to be lifted without tearing roots on the leading edge. If necessary, additional cuts can be made to prevent tearing by the sides of the bucket. Slide the bucket under shrubs and lift. The number of shrubs in each bucket should be maximised. Transfer to, and relay shrubs directly in the receptor trench, ensuring close contact with previously laid shrubs and firm in.
- Gaps between re-laid shrubs should be filled with soil taken from the donor site, with upper 20 centimetres soil horizon replaced on top. Pack lower soil layer between bucket-fulls and in gaps to remove air in the lower sections and ensure good contact of the shrub/tree roots with the ground and soil. The re-laid shrubs should be watered in upon completion of the translocation.
- The lifting and translocation procedure should be repeated with shrubs re-laid in two parallel rows on the mid-line of the receptor trench. This will result in a void strip of approximately 25 centimetres in width on each side of the receptor trench to be backfilled with soil from the donor hedge placed in the correct profile order.
- All soil in the donor hedge which is not attached to a translocated shrub should be conserved for re-use on the receptor site. Translocation and reinstatement of the important woodland ground vegetation can be achieved by appropriate movement of soil layers. Upper and lower soil horizons should be separated and replaced in the respective positions. The upper soil horizon should not be stored for longer than one week before re-spreading at the receptor site.

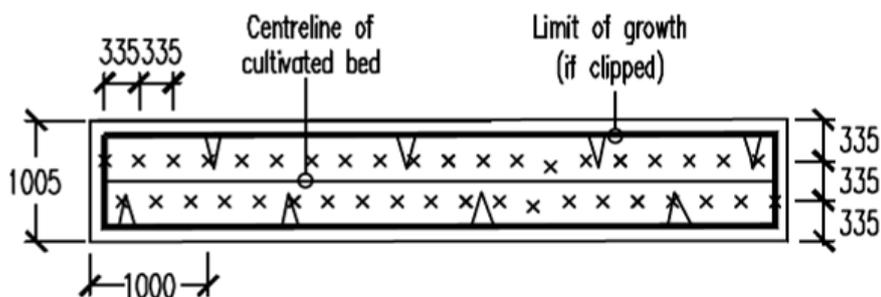
New native hedgerow planting

A new section of species-rich native hedgerow will be planted along the proposed relocation area and this planting will link with the rest of the existing hedgerow at each end. This planting will be in accordance with the recommended species and planting proportions detailed in table 8 below and following the planting pattern illustrated in diagram 1. Such hedgerow planting, once established, will provide a replacement hedgerow section of equal value to that which is cleared and will re-establish habitat connectivity with the rest of the existing hedgerow (not affected by the works) to the east and west.

**Table 8: Species to be included in hedgerow planting**

Species	Proportion within hedgerow
Spindle ( <i>Euonymus europaea</i> )	10%
Hawthorn ( <i>Crataegus monogyna</i> )	15%
Blackthorn ( <i>Prunus spinosa</i> )	15%
Field maple ( <i>Acer campestre</i> )	15%
Dog rose ( <i>Rosa canina</i> )	5%
Hazel ( <i>Corylus avellana</i> )	20%
Elder ( <i>Sambucus nigra</i> )	10%
Crab apple ( <i>Malus sylvestris</i> )	5%
Guelder-rose ( <i>Viburnum opulus</i> )	5%
Pedunculate oak ( <i>Quercus robur</i> ) will be used for standard tree planting within the hedgerow.	

**Diagram 1: Planting Pattern**



## 5.3 Badgers

### 5.3.1 Summary of findings

The tall ruderal vegetation and native hedgerow on site provide potentially suitable habitat for badger, however no badger setts or evidence of badger activity was identified on site during the walkover survey. The desk study returned three records of badger within two kilometres of the site.

### **5.3.2 Mitigation**

The following measures will be implemented on site to safeguard badgers from harm throughout the duration of the proposed works:

- Prior to works commencing the working area will be delineated with heras fencing to dissuade badgers from entering the site during the construction period.
- A check for badger activity on site will also be undertaken prior to works commencing.
- Where possible, excavations should not be left open overnight. However, if excavations are left open at night, then an earth or wooden ramp must be installed to enable any animals that fall in to escape. Work areas must be checked daily to ensure that no animals are trapped.
- Any piping should be capped over-night to prevent animals becoming trapped.

The hedgerow translocation/replacement measures detailed in section 5.2.2 and the recommended site enhancements detailed in section 5.7 will re-establish suitable habitat for badgers on site following completion of the proposed works.

## **5.4 Hazel dormouse**

### **5.4.1 Summary of findings**

The native hedgerow on site provides suitable habitat for dormouse, including a variety of food plants and flowering shrubs and dense woody vegetation growth suitable for constructing nests in. The site is also connected with further suitable habitat for dormouse in the surrounding locality. The desk study results indicate that dormice are potentially present within the area.

### **5.4.2 Further recommendations**

It is advised that further survey work is undertaken to establish whether or not dormice are present within the hedgerow on site. This survey work would involve placing artificial nesting tubes along the length of the hedgerow and undertaking regular checks for any dormice or evidence thereof, such as nests.

To complete this survey work within the 2020 season and meet the relevant guidance criteria (Bright *et al.* 2006), it is advised that 100 nest tubes are sited along the hedgerow in June and a total of three checks are undertaken between the months of July and September (inclusive).

If dormice are identified to be present on site a mitigation scheme and European Protected Species Mitigation Licence from Natural England would be required prior to any of the proposed hedgerow relocation/reinstatement or clearance works.

## **5.5 Nesting birds**

### **5.5.1 Summary of findings**

The native hedgerow, scattered trees and tall ruderal vegetation on site provide potentially suitable nesting habitat for a range of common bird species.

### **5.5.2 Further recommendations**

The following precautions should negate the risk of harming, injuring or contributing to the demise of these species:

- The proposed relocation/reinstatement or clearance of the hedgerow section on site, as well as any clearance of scattered trees or tall ruderal vegetation, should where possible be undertaken outside of the bird nesting season, this is considered to extend from the 1st March to the 31st August, or if this is not possible, must be done under the supervision of an ecologist to ensure that nesting birds are not harmed. Where nesting birds are encountered, clearance and/or demolition must be postponed until the nestlings have fledged.
- The hedgerow translocation/replacement measures detailed in section 5.2.2 and the recommended site enhancements detailed in section 5.7 will re-establish suitable habitat for nesting birds on site following completion of the proposed works.

## **5.6 Reptiles**

### **5.6.1 Summary of findings**

The tall ruderal vegetation and native hedgerow on site provide potentially suitable habitat for common reptile species and the site is connected with further suitable habitat within the surrounding area. The desk study results indicate that slow-worm and common lizard could be present within the area.

### **5.6.2 Mitigation**

An ecological clerk of works will be maintained on site during the proposed relocation/reinstatement or clearance of the hedgerow section on site, as well as any clearance of tall ruderal vegetation, to prevent reptiles from being harmed. This will entail the following measures and procedures:

- The relocation/reinstatement or clearance of the hedgerow section on site, as well as any clearance of tall ruderal vegetation, will all be supervised by a suitably qualified ecologist at all times who will undertake fingertip searches of suitable habitat for presence of any reptiles prior to clearance.
- Hedgerow translocation works will take place in the month of October during suitable, dry weather conditions, with temperatures above 10°C, and a supervising

ecologist will be present on site at all times to check any excavated soil and hedgerow vegetation for presence of reptiles.

- Any clearance works will only be conducted during suitable, dry weather conditions, with temperatures above 10°C, between March and October (inclusive).
- Hedgerow, scrub and ruderal vegetation clearance will be undertaken by hand using handheld trimmers and/or brush cutters in two phases. Vegetation will be cut to a minimum length of 10 centimetres on the initial cut which will encourage reptiles to disperse into adjacent suitable habitat on site. Subsequent cutting to ground level can then be undertaken no sooner than one hour after the initial cut.
- All arisings will be cleared from the area and removed from site to ensure that reptiles do not colonise the cut vegetation.
- The vegetation clearance will be undertaken in a directional manner to encourage reptiles to move towards the nearest adjacent suitable habitat.
- The removal of any stumps/roots will be supervised by a suitably qualified ecologist, and will be conducted during suitable, dry weather conditions, with temperatures above 10°C, between March and October, to ensure that hibernating reptiles are not harmed.

## **5.7 Ecological enhancements**

A few suggestions for ecological enhancements across the site are outlined below.

- It is recommended that the translocated hedgerow section or replacement hedgerow planting is enhanced by planting three pedunculate oak (*Quercus robur*) standard trees at an equal spacing. This will provide an additional habitat resource as well as aesthetic value when the trees are established.
- Provision of log and brushwood piles alongside the relocated hedgerow or replacement hedgerow planting in order to provide refugia and hibernacula for reptiles, amphibians and other fauna such as hedgehog. If the hedgerow section is to be translocated, then the arisings from this process could be utilised for creating log/brushwood piles.
- It is recommended that any margins of bare ground that remain after completion of the proposed works should be sown with a suitable wildflower seed mix for neutral to slightly acidic soils, such as Emorsgate EM2 or EM4 (Emorsgate Seeds, 2020). This will create sections of wildflower grassland that will provide a valuable ecological resource for a range of fauna, including invertebrates, reptiles, amphibians, birds and foraging/commuting bats, as well as an aesthetically pleasing natural feature on site.

## 6.0 REFERENCES

Bright, P., Morris, P. and Mitchell-Jones, T. (2006) *The Dormouse Conservation Handbook*, 2nd Ed. English Nature.

British Standards Institute (2012) *Trees in Relation to Design, Demolition and Construction – Recommendations BS5837:2012*

Collins, J., Charleston, P., Davidson-Watts, I., Markham, S. and Kerslake, L. (2016) *Bat Surveys for Professional Ecologists Good Practice Guidelines*. Bat Conservation Trust, London.

Department for Communities and Local Government. (2005) *Circular 06/2005: Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System*.

Devon Hedge Group (2020) *Devon hedges and development 1: moving hedges*. Available at: [https://devonhedges.org/wp-content/uploads/2015/11/13\\_development-1-Moving-hedges.pdf](https://devonhedges.org/wp-content/uploads/2015/11/13_development-1-Moving-hedges.pdf)

Emorsgate Seeds (2019) Website available at: <https://wildseed.co.uk/home>.

Joint Nature Conservation Committee. (2010) *Handbook for Phase I Habitat Survey*. JNCC.

Ministry of Housing, Communities and Local Government (2019) *National Planning Policy Framework*.

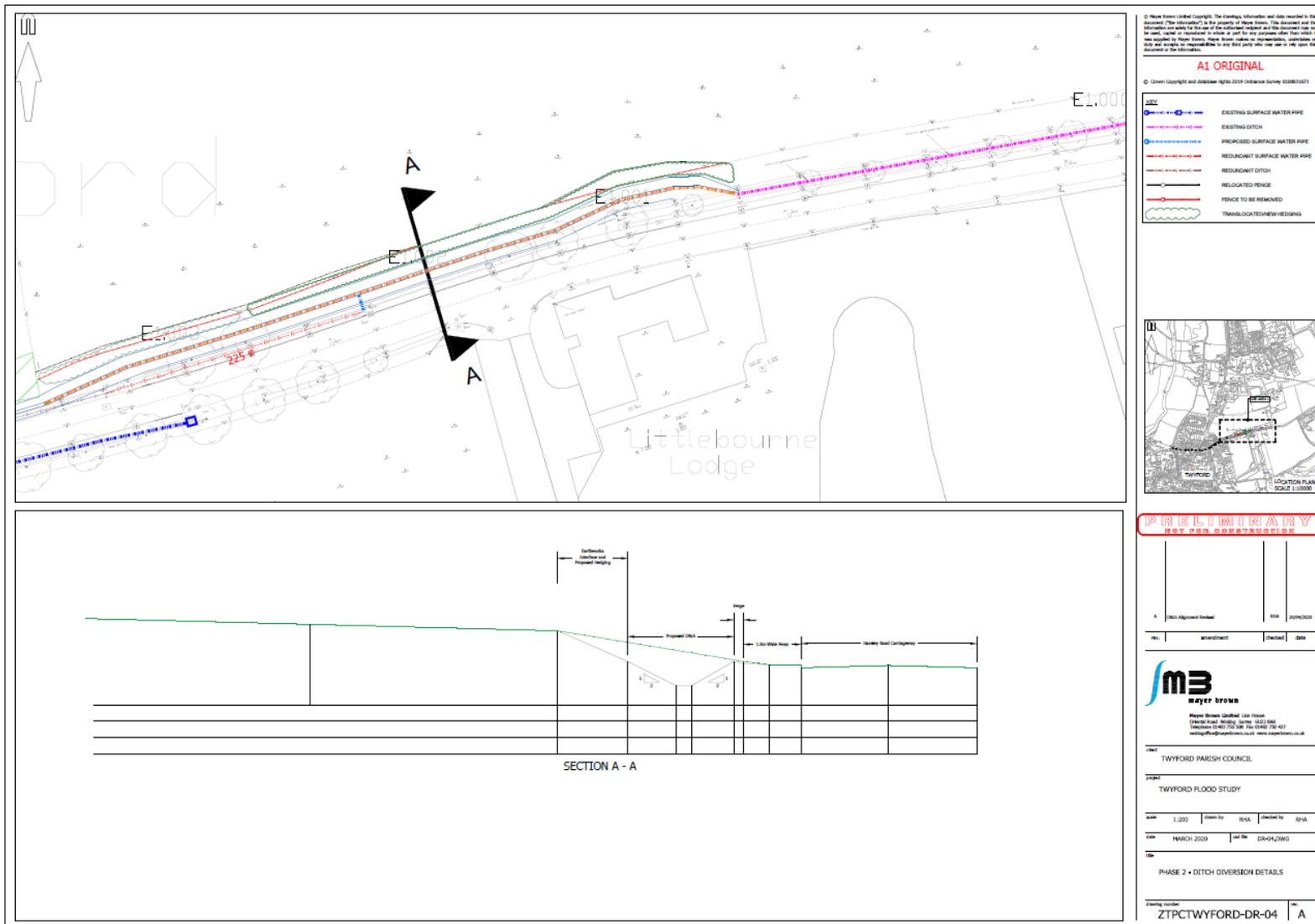
Monmouthshire County Council (2011) *Advice Note June 2011: Hedgerow Translocation*.

Multi-Agency Geographical Information for the Countryside (MAGIC) Website available at: [www.magic.gov.uk](http://www.magic.gov.uk)

## APPENDIX I: Site location plan







### APPENDIX III: Phase 1 habitat map



**Target notes to accompany Phase 1 habitat map**

Target Note	Description
1	Hardstanding public roadside walkway.
2	Tall ruderal vegetation comprising a mixture of coarse grasses, such as false oat-grass ( <i>Arrhenatherum elatius</i> ), cock's-foot ( <i>Dactylis glomerata</i> ) and barren brome ( <i>Anisantha sterilis</i> ), and vigorous-growing common forbs, such as creeping cinquefoil ( <i>Potentilla reptans</i> ), common nettle ( <i>Urtica dioica</i> ) and cleavers ( <i>Galium aparine</i> ). Other species recorded include meadow-grass ( <i>Poa sp.</i> ), lords-and-ladies ( <i>Arum maculatum</i> ), spear thistle ( <i>Cirsium vulgare</i> ), field bindweed ( <i>Convolvulus arvensis</i> ), Great willowherb ( <i>Epilobium hirsutum</i> ), ground ivy ( <i>Glechoma hederacea</i> ), hogweed ( <i>Heracleum sphondylium</i> ), stinking iris ( <i>Iris foetidissima</i> ), white dead-nettle ( <i>Lamium album</i> ), dock ( <i>Rumex sp.</i> ), tansy ( <i>Tanacetum vulgare</i> ), dandelion ( <i>Taraxacum</i> agg.) and goats beard ( <i>Tragopogon pratensis</i> ).
3	Drainage ditch.
4	Species-rich native hedgerow comprising a good variety of native woody species, including a low number of mature field maple ( <i>Acer campestre</i> ) standard trees, and a moderately species-rich field layer.
5	Scattered trees which include a semi-mature specimen of field maple and two young specimens of whitebeam ( <i>Sorbus aria</i> agg.).

## APPENDIX IV: Site photographs



**Photo 1: overview of the site showing the native hedgerow with standard trees and a strip of tall ruderal vegetation in the foreground.**



**Photo 2: strip of tall ruderal vegetation, drainage ditch and native hedgerow.**



**Photo 3: overview of the central part of the site showing the native hedgerow with standard field maple (*Acer campestre*) trees and the hardstanding public walkway.**



**Photo 4: scattered trees at the eastern end of the site.**