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Date: October 2014

Land at Bishopton Lane,
Stratford-on-Avon,
Warwickshire

Ecological Appraisal

**SUPERSEDED
PENDING 2015
SURVEYS**

Prepared by
CSa Environmental Planning

On behalf of
Miller Strategic Land &
Taylor Wimpey UK

Report No: CSa/1957/01

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Appendix A: MAGIC Database Site Check Report and Plan

Appendix B: Summary of Non-Statutory Wildlife Sites from WRBC (information regarding species data and plans available on request – copyrights from WRBC apply)

Appendix C: Habitats Plan CSa/1957/100

1.0 INTRODUCTION

- 1.1 This report has been prepared by CSa Environmental Planning on behalf of Miller Strategic Land and Taylor Wimpey UK Ltd. It sets out the findings of an Ecological Appraisal of land at Bishopton Lane, Stratford-on-Avon¹, Warwickshire. The survey has been commissioned to provide an assessment of the potential ecological issues which could arise from proposals for promotion of a mixed development at the site.
- 1.2 This ecological appraisal aims to:
- undertake a desktop search for relevant biological records and assess their significance;
 - review the site in relation to its wider ecological context;
 - describe and map the habitats present at the site;
 - identify any potential protected or notable species issues;
 - evaluate habitats and species in line with standard methodologies;
 - present the findings of detailed species-specific survey/assessment work undertaken;
 - assess potential impacts, and
 - recommend appropriate mitigation and biodiversity enhancement measures.
- 1.3 This report presents the ecological appraisal information in a standard format accepted by ecological consultees across the country, adopting various best-practice procedures and methodologies.
- 1.4 The site consists of two extensive arable fields, located south of the A46 trunk road, which slope down towards a single low lying permanent grassland field and the Stratford-upon-Avon¹ canal. All of the fields are bordered by well-established hedgerows, some of which contain mature individual trees.
- 1.5 This report combines the findings of an original extended Phase 1 survey undertaken in 2012 with updates from 2013 and 2014. Where relevant, this report also takes into account the results of protected species surveys in order to appropriately evaluate the ecological impacts at the site and assess potential impacts. Full survey data from these surveys is included within a separate Protected Species Report (CSa/1957/06).

¹ N.b. 'Stratford-on-Avon' is the name used for the Administrative District and 'Stratford-upon-Avon' is the name which refers specifically to the market town and civil parish hence in this report the site is referred to as being in Stratford-on-Avon, but some of the other references are to the town e.g. Stratford-upon-Avon Canal

2.0 LEGISLATION AND PLANNING POLICY

Legislation

- 2.1 There are several pieces of legislation relating to wildlife and biodiversity. Those of particular relevance to ecology and development are the Conservation of Habitats and Species Regulations 2010 (as amended), which enacts the Habitats and Birds Directives² into UK law, the Wildlife and Countryside Act 1981 (as amended) and, regarding specific protection of badgers, the Protection of Badgers Act 1992. In addition, the Natural Environment and Rural Communities (NERC) Act 2006 sets the requirement for planning authorities to consider impacts on “*species of principle importance for the conservation of biodiversity*” when determining planning applications. This is described under ‘Biodiversity and Priority Species’ below. These pieces of legislation and the species and habitats they afford protection to have been addressed, as appropriate to the development site, in the production of this report.
- 2.2 Natural England Standing Advice³ regarding protected species aims to support local authorities and forms a material consideration in determining applications in the same way as any individual response received from Natural England following consultation (except where applications require EIA or may affect a Natura 2000 site).

Biodiversity and Priority Species

- 2.3 The NERC Act 2006 Section 40(1) states that each public authority “*must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity*”. This legislation makes it clear that planning authorities should consider impacts to biodiversity when determining planning applications, with particular regard to the Section 41 list of 56 habitats and 943 species of principle importance, even where they are not covered by other legislation. The S41 list was taken forward for action under the UK BAP (first published in 1994). The UK BAP has now been superseded by the Biodiversity 2020 Strategy⁴ (published August 2011), which continues to prioritise the S41 list, setting national targets for the period to 2020, and the UK Post-2010 Biodiversity Framework⁵ (published July 2012), which shows how these contribute to targets at the European level. Whilst BAP are therefore no longer formally recognised these can still be of use in meeting targets for nature conservation. Many of the tools and resources originally

² Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora, and Council Directive 79/409/EEC on the Conservation of Wild Birds, respectively.

³ www.naturalengland.org.uk/ourwork/planningtransportlocalgov/spatialplanning/standingadvice/default.aspx

⁴ Defra (2011) *Biodiversity 2020: A strategy for England's wildlife and ecosystem services*. Defra, London

⁵ JNCC and Defra (2012) *UK Post-2010 Biodiversity Framework* (on behalf of the Four Countries' Biodiversity Group). July 2012.

developed for the BAP remain in use, such as background information BAP priority species and habitats, which still form the basis of work at national level.

- 2.4 The local Warwickshire, Coventry and Solihull BAP is currently under review but concentrated conservation action into 26 Species Action Plans (SAPs) and 24 Habitat Action Plans (HAP). The SAPs and HAPs relevant to the site at Bishopton Lane include:

SAPs

- barn owl *Tyto alba*;
- bats (all species);
- farmland birds (grey partridge *Perdix perdix*, skylark *Alauda arvensis*, tree sparrow *Passer montanus* and corn bunting *Emberiza calandra*);
- otter *Lutra lutra*;
- song thrush *Turdus philomelos*; and
- water vole *Arvicola amphibius*.

HAPs

- Canals;
- Roadside verges;
- Field margins;
- Hedgerows; and
- (Lowland) neutral grassland

National Planning Policy

- 2.5 The National Planning Policy Framework (2012)⁶ (NPPF) sets out the government planning policies for England and how they should be applied. With regards to ecology and biodiversity, Chapter 11: Conserving and Enhancing the Natural Environment, paragraph 109, states that the planning system and planning policies should:

- minimise impacts on, and provide net gains in, biodiversity where possible, “contributing to the Government’s commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures”; and
- recognise the wider benefits of ecosystem services.

- 2.6 Under these aims, paragraph 117 states the need to plan for biodiversity at a landscape scale, linked to national and local targets. Paragraph 118 sets out the principles that local planning authorities should apply when determining planning applications:

⁶ Department for Communities and Local Government (2012) National Planning Policy Framework

- refuse planning permission if significant harm cannot be avoided, adequately mitigated, or, as a last resort, compensated for;
- encourage opportunities to incorporate biodiversity in and around developments;
- permission should not normally be permitted where an adverse effect on a nationally designated Site of Special Scientific Interest (SSSI) is likely, either individually or in combination with other developments; and
- refuse planning permission if development will result in the loss or deterioration of irreplaceable habitats, such as ancient woodland and the aged or veteran trees, unless the need for, and benefits of, the development in that location clearly outweigh the loss.

Local Planning Policy

2.7 Relevant local planning policies for Stratford-on-Avon District Council are summarised in Table 1. The proposed Core Strategy to include planning policies for the future has not yet been formally adopted. Therefore, saved plans from the previous District Local Plan are still relevant and these are also summarised in Table 2 below.

Table 1. Summary of local planning policy relating to ecology- proposed Core Strategy

Policy	Summary
Stratford-on-Avon DC Core Strategy (Proposed Submission Version June 2014) <i>Consultation period</i>	
CS.5 Landscape	<p><i>C. Trees, Woodland and Hedges</i> Proposals that will have an impact on woodlands, hedges and trees should incorporate measure to protect their contribution to landscape character, public amenity and biodiversity.</p>
CS.6 Natural Environment	<p>-Development will be expected to contribute towards a resilient ecological network throughout the District that supports ecosystems and provides ecological security for wildlife, people, the economy and tourism. -Developments that are likely to have an adverse effect either directly, indirectly or cumulatively upon a site designated through the EC Habitats Directive or Birds Directive will not be permitted.</p> <p><i>A. Biodiversity</i> Proposals will be expected to secure a net gain in biodiversity by:</p> <ol style="list-style-type: none"> 1, Safeguarding existing habitats, including: <ol style="list-style-type: none"> (a) Sites of Special Scientific Interest (b) Those that are irreplaceable in view of their unique characteristics...; (c) Those subject to local designations such as Local Wildlife Sites and Local Nature Reserves; (d) Those not yet subject to formal designation but which are known to make a positive contribution to biodiversity, taking into account of their current or potential role in strategic networks of habitats across the District; (e) Those which comprise or host habitats or species of principal conservation importance. 2. Making provision, where appropriate, for measures that will secure the creation and management of additional habitats, to strengthen networks of habitats, to foster landscape scale conservation in line with identified opportunities and priorities, to address the priorities of the Local Biodiversity Action Plan and to support an increase in the local populations of species of principal importance.

	Where a development will impact on a habitat or species and mitigation cannot be provided on site in an effective manner, developers will be required to offset the loss by contributing to appropriate biodiversity projects elsewhere in the area.
CS.6 Green Infrastructure	<p><i>A. Green Infrastructure Network</i></p> <p>The existing Green Infrastructure network in the District will be promoted through the principals of protection, enhancement, restoration and creation. The network will help to: ...form a place for biodiversity to survive and thrive in the face of climate change.</p> <p>Access to Green Infrastructure features...will be provided through local nature reserves, green corridors, waterway ('blue') corridors, allotments and woodland, together with connections between built up areas and the countryside.</p>

Table 2: Summary of saved local planning policies- Local Plan Review

Policy	Summary
Stratford-on-Avon District Local Plan Review (2006-2011)	
Policy EF.6 Nature Conservation and Geology	<p>Features of nature conservation and geology will be protected in the following ways:</p> <p>(a) not permitting development likely to destroy or damage, either directly or indirectly, a designated or proposed European site, or a Site of Special Scientific Interest (SSSI)</p> <p>(b) assessing development and land use change likely to have an adverse impact upon a site which is subject to a local ecological or geological designation, or is of substantive nature conservation or geological value, against the importance of the site and the extent to which that impact can be subject to mitigation or other compensatory measures; and</p> <p>(c) seeking to ensure the protection and long-term management of features of significant ecological and/or geological importance such as wildlife corridors, links or stepping stones.</p>
Policy EF.7 Nature conservation and geology-enhancement	<p>The retention, protection, management and where appropriate, creation of wildlife habitats and geological features will be pursued in order to improve ecological diversity, contribute to geological science and assist in achieving biodiversity Action Plan targets.</p> <p>Opportunities for integrating ecological and geological features into development proposals will be thoroughly investigated and, where appropriate, secured.</p>
EF.7A- Nature conservation and geology-enhancement	<p>Development and other land uses changes that may have an adverse impact on protected, rare, endangered or other wildlife species of conservation concern will not be permitted unless compensatory measures necessary to protect the species, minimise disturbance and provide alternative habitats to sustain or enhance the population can be secured by means of planning condition, planning obligation or other appropriate method.</p>
EF.10 Trees, woodland and hedgerow-preservation	<p>The landscape, amenity and nature conservation value of trees, woodland and hedgerows will be preserved and enhanced.</p>

3.0 METHODOLOGY

Desktop Biological Records Search

- 3.1 The Multi-Agency Geographic Information for the Countryside (MAGIC) online database was searched, looking for all relevant statutory sites within 3km of this development site.
- 3.2 A biological records search was also conducted for the area of land encompassing an approximate 5km square surrounding the site. Warwickshire Biodiversity Records Centre (WBRC) was contacted for records of non-statutorily designated wildlife sites and protected/notable species. The results of the record search are discussed within the report where appropriate.
- 3.3 Biological records provide a useful indication of the species present within a searched locality. However, it should be noted that the absence of a given species from a data search cannot be taken to represent actual absence. Furthermore, species distribution patterns should be interpreted with caution.

Site Survey

- 3.4 The site was first visited on 02 April 2012 by Katie Critchley MCIEEM and Jack Ward in order to undertake an 'extended Phase 1' survey of the proposed development site. This survey is at a level intermediate between the Phase 1 survey (where standardised habitat mapping is undertaken together with making notes on dominant and notable species) and the more detailed survey techniques that may be used to specifically record or survey particular habitats or species.
- 3.5 In this survey, plant species observed within each habitat type are recorded and habitats are classified and mapped. Scientific names of botanical species are referenced in accordance with Stace⁷. Note is also taken of the more conspicuous fauna present during the survey, with particular attention paid to any evidence of, or potential for, the presence of protected or notable species.
- 3.6 Protected Species surveys were undertaken over a period of months during 2012 and 2013, at which time the habitats for this site were re-surveyed by Katie Critchley MCIEEM and Kate Kibble ACIEEM and the habitats plan was updated to reflect the current status of the site. A further update check of the habitats present at the site was undertaken by Katie Critchley and Kate Kibble on 02 June 2014.

⁷ Stace, C. A. (2010) *New Flora of the British Isles (Third edition)*, University Press, Cambridge.

Evaluation and Assessment

- 3.7 Ecological features are evaluated using the Guidelines for Ecological Impact Assessment 2006, produced by the Institute of Ecology and Environmental Management⁸. These guidelines promote a more scientifically rigorous and transparent approach to the ecological assessment process. This methodology provides a standardised approach, formulated from the views of a wide spectrum of ecological professionals.
- 3.8 The process of valuing ecological features and resources is complex and subjective. A number of factors need to be taken into account when applying professional judgement to value ecological features. These include the following:
- designated sites and features;
 - hedgerow regulations;
 - biodiversity value;
 - potential value;
 - secondary or supportive value;
 - social/community value;
 - economic value;
 - legal issues, and
 - multi-functional features.
- 3.9 Legal protection needs to be considered separately from value. Our assessment and reporting will highlight legal issues and the appropriate mechanism for dealing with any such constraint. However not all legally protected species are rare (e.g. badgers) so legal requirements and ecological value are separate considerations

Geographic Frame of Reference

- 3.10 In assigning value to an ecological feature/ resource the following geographic frame of reference should be used:
- international;
 - national (i.e. England/Northern Ireland/Scotland/Wales);
 - regional;
 - county (or metropolitan e.g. in London);
 - district (or unitary authority or borough);
 - local or parish, and
 - within zone of influence only (which might be the project site or a larger area).

⁸ Institute of Ecology and Environmental Management (2006). *Guidelines for Ecological Impact Assessment in the United Kingdom* (Internet) Available from <http://www.ieem.net/ecia/EcIA%20Approved%207%20July%2006.pdf> /Accessed 2012

4.0 RESULTS AND EVALUATION

Site Location

- 4.1 The site is situated on the north western periphery of the town but within the administrative district of Stratford-on-Avon, Warwickshire between the A46 trunk road to the northwest and Bishopton Lane to the south east and a road known as The Ridgeway running along the western boundary. The north eastern boundary of the site is formed by the Stratford-upon-Avon Canal.
- 4.2 The surrounding landscape comprises residential housing to the west and south east with the village of Bishopton to the north east. Land use in the wider landscape, beyond the residential buildings, on the other side of the A46 and to the west is agricultural, predominantly arable.

Designated Sites

Statutory Sites

- 4.3 The MAGIC database search (see Appendix A) has revealed that there are no statutory wildlife site designations covering any part of the site. Two Sites of Special Scientific Interest (SSSI's) and one Local Nature Reserve (LNR) are located within an approximate 3km radius of the site. A brief description of these is provided in Table 3 below, all distances provided are approximate.

Table 3. Statutory designated wildlife sites within 5km of the site

Name and Designation	Distance & location	Description
Welcombe Hills LNR	1.6km E	A mosaic of grassland, woodland & scrub – known for the yellow meadow ant hills and avian diversity
Racecourse Meadow SSSI	2.1km S	Herb-rich, unimproved neutral meadow on River Avon flood plain with pepper saxifrage <i>Silau silaus</i> and corn parsley <i>Petroselinum segetum</i>
Copmill Hill SSSI	3km NW	Species-rich calcareous grassland with entomological value. Nationally restricted (NS) white-letter hairstreak <i>Strymonidia w-album</i> and marbled white <i>Melanargia galathea</i> plus exceptional moth fauna

Non-Statutory Sites

- 4.4 WBRC have provided information for non-statutory wildlife sites within the 2km search radius. Warwickshire maintain both County important sites, known as Local Wildlife Sites (LWS) and sites of nature conservation interest, known as Ecosites which can have additional LWS or statutory status. Details of 53 Ecosites were provided within the data search results of which 12 are also designated as LWSs (fully or partly), and 26 have been identified as potential LWSs. Potential LWSs have equal status to LWSs until the reviewing process has been finalised. Details of the most relevant sites within a c.500m radius are provided in Table 4 below, full details of all sites are included in Appendix B.

Table 4. Relevant Non-statutory wildlife sites within c.500km of the site provided by WBRC

Ecosite Name and Reference	Distance and bearing from the site (at closest point)	Description/reason for designation
Ecosite 14/15 Stratford-upon-Avon canal	Adjacent to the north-eastern boundary of the site.	Identified as a potential LWS (pLWS) Important wildlife corridor with a variety of habitats, supporting relatively rich bird life. Sections of canal adjacent to wet meadows are noticeably richer.
Ecosite 105/15 Bishopton Lane	Borders the site to the south-east	Identified as a pLWS A narrow but heavily used lane. Some of the hedges are of high nature conservation value (and of some historic interest). Some of the hedges are unmanaged and of lower value. A small area close to the Park and Ride car park includes associated grassland and tall herb habitat of local value.
Ecosite 109/15 Cadle Farm Pasture	c.20m south-west	Designated as a LWS A small strip of land west of the site and south of the A46 road embankment which is dominated by tall grasses.
Ecosite 85/15 Shottery Brook	c.40m north	Designated as part of the River Avon LWS A brook within the urban area of Stratford-upon-Avon. The brook has some aquatic flora and sections are lined with a good range of trees and hedges.
Ecosite 99/15 Railway, Wilmcote	c.190m east	There is little information about this site. Anecdotal information suggests badgers use the embankments and cuttings and a range of butterflies are present.
Ecosite 24/15 Burton Farm Embankment	c.260m north	A section of the Stratford-upon-Avon canal which is of local value to breeding butterflies.
Ecosite 89/15 Wildmoor	c.350m west	Identified as a pLWS) Probably District value. Cattle-grazed field containing ridge and furrow. Some areas of species-rich grassland including cowslip <i>Primula veris</i> and lady's bedstraw <i>Galium verum</i> .
Ecosite 103/15 Bishopton Hamlet	c.490m north-east	Poor semi-improved grassland with Parish value.

General Site Description

- 4.5 The site comprises two extensive arable fields along with a smaller arable field and an area of semi-improved grassland adjacent to the Stratford-upon-Avon Canal at the north-eastern end of the site. There are native hedgerows both surrounding and within the site, many of which include mature trees.
- 4.6 The habitats present within the site are illustrated on the Habitats Plan (CSa/1957/100) in Appendix C.

Habitats and Flora

Notable Flora Records

- 4.7 WBRC have provided 25 notable records of rare plants within the data search results. The records with dates provided range from 1835 (historic) to 1999. The nearest records to the site boundary comprise fritillary *Fritillaria meleagris* c.480m east of the site boundary and cornflower *Centaurea cyanus* c.530m to the north-east. The remaining records are all historic, undated or over 1km from

the site boundary. The majority of records related to species associated with aquatic or unimproved grassland (e.g. headlands/verges).

- 4.8 Four native black poplar *Populus nigra* subsp. *betulifolia* records are held by WBRC, as well as records of a veteran field maple *Acer campestre* and walnut tree *Juglans regia*. All are located over 1.5km from the site.

Arable

- 4.9 Much of the site is taken up by two large and a smaller, intensively managed arable fields which have supported both various crops including winter wheat and oilseed rape over the course of 2012-2014. There are uncultivated margins around all arable fields which are typically 0.5-1m wide but larger alongside ditches and within the field corners, particularly in F3 though these appear to be regularly sprayed with herbicide to reduce invasive weeds.

Semi-improved Grassland

- 4.10 F4 in the north eastern section of the site, adjacent to the canal, comprises semi-improved, species poor grassland which appears to be cut occasionally. There is evidence of ridge and furrow, indicating it has not been cultivated in modern times. The sward is uneven and largely dominated by tall ruderal species throughout the year. Species recorded include red fescue *Festuca rubra*, Yorkshire fog *Holcus lanatus*, cock's-foot *Dactylis glomerata*, with smooth meadow grass *Poa pratensis* and bent *Agrostis* sp. In some areas tufted hair grass *Deschampsia cespitosa* is abundant in distinct tussocks. Broad-leaved herb species include common sorrel *Rumex acetosa*, red clover *Trifolium pratense*, creeping buttercup *Ranunculus repens* and some tall ruderals such as broad-leaved dock *R. obtusifolius* and hogweed *Heracleum sphondylium*. Plants associated with a wetter habitat include meadowsweet *Filipendula ulmaria* (dominant), hemlock *Conium maculatum* and cuckooflower *Cardamine pratensis*.

Tall Ruderal

- 4.11 Scattered tall ruderal species such as cow parsley *Anthriscus sylvestris*, docks *Rumex* spp. and common nettle *Urtica dioica* occur regularly across the site within the field margins and hedgerow bases.
- 4.12 Much of the grassland within F4 is interspersed with additional rosebay willowherb *Chamerion angustifolium*, meadowsweet and common reed *Phragmites australis* and dense beds of common nettle are present in the northern corner of F4 and around disturbed areas, such as manure heaps/brash piles. Very dense swathes of meadowsweet, pendulous sedge *Carex pendula*, hemlock *Conium maculatum* and other ruderal species occur within the ditch and bank along the edge of the canal.

Scrub and Trees

- 4.13 Dense scrub is present in various parts of the site, such as bramble *Rubus fruticosus* agg. in the south-western corner of F3 adjacent to hedgerow H6 and in the associated ditch. Scattered blackthorn *Prunus spinosa* and hawthorn *Crataegus monogyna* scrub encroachment exists along many of the hedgerow bases, along with bramble, and along the canal edge where it is more mature and forms a belt of trees and scrub.
- 4.14 The majority of on-site mature and semi-mature trees are present within the well-established hedges as marked on the habitats plan. The most frequently observed species include; pedunculate oak *Quercus robur*, ash *Fraxinus excelsior* and field maple *Acer campestre*. The most mature specimens are oak trees at the north eastern end of the site within H10, as well as those in H9. In addition there are several mature trees within the south eastern section of H7.
- 4.15 There several immature/semi-mature tree specimens outside the boundary but adjacent to the site within the grass verge or ditch on the south eastern boundary of the site, running alongside Bishopton Lane. It is assumed that these were part of a landscaping scheme related to road or drainage improvements at some point. These include several species such as, silver birch *Betula pendula* sp., lime *Tilia x europaea*, alder *Alnus glutinosa*, rowan *Sorbus aucuparia*, ash and sycamore *Acer pseudoplatanus* for example.
- 4.16 There are numerous small trees resulting from natural regeneration distributed throughout the hedgerows where they have been allowed to grow up, in particular H6 and H11 where hawthorn and field maple are frequent.

Hedgerows

- 4.17 Other than the canal edge on the northern boundary and adjacent to Spa Farm, hedgerows are present delineating all the field margins on site, some of these area are associated with ditches or banks. Table 5 below gives a description of features present and a list of species within each hedgerow. The species-rich status of each hedgerow has been determined following a formal hedgerow assessment undertaken in April 2013, details of which are provided in a separate Protected Species Report (CSa/1957/06).

Table 5. Descriptions of hedgerows/boundaries

Hedge	Brief description	Native woody species present	Species rich?*	Important? (Wildlife & Landscape criteria)
H1	C.450m long, 3-4m high, side-flailed, planted hedge with semi-mature trees backing on to wooded road embankment.	Hawthorn, blackthorn, ash, hazel, dog rose, oak.	Species rich	Not Important
H2	C.500m long, 5-6m high, side-flailed, planted mature hedge backing on to wooded road embankment. Encroaching blackthorn in F2 for much of hedgerow 1-3m wide.	Hawthorn, blackthorn, dog rose (mature ash, oak, hazel and willow in woodland behind the hedgerow).	Species rich	Borderline

H3	C.250m long. Flailed on field side with dry ditch and dense scrub on road embankment behind.	Hawthorn, blackthorn, ash, willow and oak.	Species rich	Important
H3a	C.50m long. Flailed on field side, dense scrub on road embankment behind. Ditch with standing water leading to culvert.	Willow, hawthorn, dog rose, blackthorn, hazel.	Species rich	Borderline
H4	C.250m long, 1.5-2m high x 1.5-2m wide, regularly flailed mature double, laid hedge on a bank with ditch to west alongside road.	Hawthorn, privet, dog rose, ash, blackthorn, elder, field maple.	Species rich	Borderline
H5	C.250m long, 4-5m high x 3m wide flailed double hedgerow (laid in the past) on a bank, with c.75m deep dry ditch on south-western side, gappy in places.	Hawthorn, field maple, blackthorn, elder, dog rose, ash, privet, elm, ash.	Species rich	Important
H6	C.250m long. 4-5m high, side-flailed single, laid in past, gappy to the north with dead wood/scrub at the base. 2m wide x 0.5m deep dry ditch on west side. Mature horse chestnut and laurel at east end by farm	Field maple, hawthorn, blackthorn, privet, elm, crab apple, ash	Species rich	Important
H6a	C.75m long. Old laid hedgerow 1.5m high x 1.5m wide, hard flailed.	Hawthorn (dominant), occ. dead elm, elder, field maple.	Species rich	Borderline
H7	C.450m long, 1.5-2m high x 1-2m wide, flailed, mature, previously laid hedgerow. Parallel to the road with adjacent dry ditch and 2m wide verge. Includes mature ash, oak and single pear.	Hawthorn, ash, blackthorn, field maple, dog rose, oak, privet, hazel, elm.	Species rich	Important (also historically important)
H8	C.500m long, 3-5m high x 3-4m wide, mature flailed hedge, semi-mature/mature trees. 1-2m headland, adjacent dry ditch with scrub and gappy in places.	Hawthorn, privet, dog rose, elm, blackthorn, sycamore, hawthorn, ash, field maple, rowan, alder, elder.	Species rich	Important (also historically important)
H9	C.175m long, c.40m of Leylandii/laurel in south. Remaining hedgerow flailed/topped. 1.5m height x 1.5m wide. Gappy, some dead wood at the base. Dry ditch on road side.	Hawthorn, oak, ash, blackthorn, dog rose.	Species rich	Important
H9a	C.75m long. 10m high leylandii for 10m from H9 before gap of 10m. The remainder is comprised of 4-5m small trees and mature gappy scrub.	Hawthorn, blackthorn, dog rose, oak, ash, field maple	Species rich	Borderline
H10	C.200m long, 1.5m high x 1m wide hard flailed hedgerow.	Hawthorn, elder, field maple blackthorn, ash, oak.	Species rich	Borderline

*As described within the Hedgerow Survey Handbook⁹: "where the structural species making up the 30m section of hedgerow include at least 5 (or at least four in northern and eastern England, upland Wales and Scotland) woody species that are either native somewhere in the UK, or which are archaeophytes, the hedgerow is defined as species-rich. Climbers and bramble do not count towards the total except for roses".

4.18 Six of the hedgerows would qualify as Important under the Wildlife and Landscape criteria of the Hedgerow Regulations 1997. All are species-rich, containing at least five native woody species on average. Hedgerows H7-H9

⁹ Defra, 2007. *Hedgerow Survey Handbook*. A standard procedure for local surveys in the UK. 2nd edition. Defra, London

also qualify under the Archaeology and History criteria as it is associated with an entry within the Warwickshire Historic Environment Record, namely the Early Medieval *Sealt Stret*.

- 4.19 Most hedgerows on-site are mature and under moderate management regimes with evidence of recent flailing along most lengths. Sections of H5 and H6 were overgrown and unmanaged at the time of survey.



Photo 1. The species-rich hedgerow, H4 marks the south-western boundary



Photo 2. Mature individual oaks at south east end of H10

Off-site Wooded Area

- 4.20 The north-western boundary lies adjacent to a wooded embankment of semi-mature/mature native tree species c.15m in width which form part of the planted screen for the trunk road the A46. The species present include, ash, hazel *Corylus avellana* and goat willow *Salix caprea*.

Open Water

- 4.21 There are several dry ditches across the site which are associated with the hedgerows. They were not found to support any aquatic species; grasses, scrub and herbs typical of hedgerow-bases dominate where the ditch is not too shaded.
- 4.22 On the north-eastern edge of F4 is a ditch, c.200m in length, with standing water in at the time of survey. This is joined by another wet ditch which dissects F4. It is assumed that these ditches are usually wet due to the character of the associated vegetation included common reed, pendulous sedge and meadow-sweet, and the gradual slope of the land from The Ridgeway at the south western end of F1 down towards the canal. All ditches are shown on the Habitats Plan.
- 4.23 There are no ponds present on site.
- 4.24 The Stratford-upon-Avon¹⁰ canal delineates the north-eastern boundary of the site with soft banks on the site side and a reinforced bank and the tow path on

¹⁰ N.b. 'Stratford-on-Avon' is the name used for the Administrative District and 'Stratford-upon-Avon' is the name which refers specifically to the market town and civil parish hence in this report the site is referred to as being in Stratford-on-Avon, but some of the other references are to the town e.g. Stratford-upon-Avon Canal

the opposite bank. Canals provide important wildlife corridors and are a priority habitat under Warwickshire's Habitat Action Plan (HAP). The Stratford-upon-Avon canal has been identified as a potential LWS (Ecosite 14/15) due to the variety of habitats, supporting relatively rich bird life.



Photo 3. Stratford-upon-Avon Canal pLWS looking north west



Photo 4. Bishopton Lane pLWS looking south

Amenity Grassland and Garden Planting

- 4.25 There are no areas of amenity grassland or gardens within the survey area. As described above, Spa Farm house is surrounded by an extensive garden and mown grass area which is outside the survey area. In addition, the verges on the south eastern boundary along Bishopton Lane are regularly mown and parts are characteristic of amenity grass, however it is understood that these are outside the survey area.

Hard-Standing and Buildings

- 4.26 There is a single area of hard standing within the site boundary which consists of a farm track, composed of concrete sections, linking the A46 to Bishopton Lane, a public foot path also runs along this track.
- 4.27 There are no buildings present within the survey area, however a house with associated outbuildings and gardens, known as Spa Farm is located to the north-east of the farm track. This area was not surveyed and is currently excluded from the development proposals, however the house appeared to be a pitched clay tiled roof with gables and hanging tiles, the outbuildings were of various construction, some two storey, predominantly with corrugated roofs and wooden frames which may offer potential roost opportunities to bats.

Fauna

Bats

- 4.28 WBRC has provided 98 records of bats within the data search, comprising details of nine species recorded between 1992 to 2013. Species recorded locally comprise common and soprano pipistrelle *Pipistrellus pipistrellus/pygmaeus*, brown long-eared bat *Plecotus auritus*, noctule *Nyctalus noctula*,

Leisler's bat *Nyctalus leisleri*, serotine *Eptesicus serotinus*, Natterer's *Myotis nattereri*, Daubenton's *Myotis daubentonii* and barbastelle *Barbastella barbastellus*, as well as some unidentified bat species.

- 4.29 Two records of brown long-eared bat (maternity roost) and common pipistrelle (in flight) have been provided for The Ridgeway area adjacent to the west of the site, from 2005. Bat detector records of common and soprano pipistrelle, noctule, *Myotis* and brown long-eared bat have been provided within close proximity to the site.
- 4.30 Twenty-five records of bat roosts have been provided within the search area. These are largely scattered within Stratford-on-Avon town centre and the surrounding suburbs. Seven roost records are given for within 1km of the site including the maternity roost of brown long eared bat c.60m west of the site mentioned above, a common pipistrelle bat roost c.570m to the west and five roosts of unconfirmed bat species between 450m and 900m from the site. These are predominantly of single bats or small numbers of droppings though one roost of 85 bats has been described from 2011.
- 4.31 Hedgerows, mature trees and aquatic habitats within and adjacent to the site form the key habitat for foraging and commuting bat species at the site, with additional value added by the adjacent canal habitats. Bat surveys at the site in 2012 and 2013 found the hedgerows and open field habitats to be used by a range of common and widespread bat species. Some mature trees were identified to support bat roosting potential.

Badgers

- 4.32 WBRC have provided five records of road casualty badgers for within a 1km radius of the site. Three of these occur along the A46 to the north of the site whilst another has been recorded along the A422 c.160m south-west of the site. The fourth record falls within the site boundary at the south-western end of the site and likely relates to Ridgeway.
- 4.33 Foraging habitat for badgers is present at the site in the form of arable land, grassland and hedgerows. The hedgerow bases and adjacent woodland belt provide potential sheltering opportunities for badgers. No setts have been identified on-site, however other evidence of badgers (e.g. latrines) confirms their use of on-site habitats.

Otter

- 4.34 WBRC have provided 17 records of otter (spraints and visual sightings) from the River Avon for between 2005 and 2011, all of which occur at least 2km from the site boundaries.
- 4.35 There is potential for otter to use the adjacent Canal and some potential for them to use dense scrub and trees within F4. WBRC state that all major water

courses within the county should be considered 'otter-positive'. Fresh otter spraint (droppings) has been found on several occasions by CSa surveyors beneath the Bishopton Lane Bridge next to the site. This indicates that otters are using this stretch of the Stratford-upon-Avon canal.

Water vole

- 4.36 WBRC holds one historic record for water vole *Arvicola amphibius* from 1984 at a point along the Shottery Brook c.1.2km south of the site boundary. The Stratford-upon-Avon canal and associated grassland and tall ruderal habitats have potential to support water vole.
- 4.37 There is potential for water vole to utilise the natural southern banks of the canal. The rank grassland, tall ruderal and ditches within F4 also provide suitable habitat for this species if present along the Canal. No evidence of water vole was found within F4 or along adjacent stretches of the canal during formal surveys in April and July 2013. Feeding evidence of water vole was since found during a visit to the onsite field F4 in 2014. Correspondence with Paul Wilkinson of the Canal and River Trust highlighted that water vole and otter have recently expanded their range within Warwickshire.

Other mammals

- 4.38 Thirteen records of hedgehog *Erinaceus europaeus* are held by WBRC are held within the search area. Nine of these records fall within the four grid squares which encompass the site. One record of hedgehog from 1987 falls on the southern boundary of the site along Bishopton Lane with a further five records of juvenile and adult hedgehogs pre-1994 for within 150m of the southern boundary, relating to Bishopton Lane and the nearby gardens.
- 4.39 WBRC provided one record for harvest mouse *Micromys minutus* from 2000 for the western boundary of the site which likely relates to a nest found within the crop or field margins. This is a UK priority BAP species whose population has declined in the last 30 years.
- 4.40 There are also three records of brown hare *Lepus europaeus* within 2km of the site. One record from 1992 falls within the adjacent 1km grid-square west of the site (SP1655). The remaining two records from 2008 and 1992 occur c.1.2km south and c.2km north-east of the site.
- 4.41 The site is likely to be used by a range of widespread small mammal species as well as deer and red fox *Vulpes vulpes*.

Birds

- 4.42 WBRC has provided three records of barn owl *Tyto alba* (WCA Schedule.1) within 2km of the site boundary. The nearest was seen perched within a field known as Ecosite 107/15 (Field A06 South East) in 2008 c.75m north east of

the site, with the other two records occurring over 1km from the site. Barn owl and farmland birds are a Warwickshire BAP priority species.

- 4.43 Records of 60 notable bird species have also been provided by WBRC, 45 of which are historic records (pre-1980) associated with the Stratford Canal and Meadows c.350m north of the A46. The only records post 2000 within a 2km radius of the site boundary are that of hawfinch *Coccothraustes coccothraustes* and dunnoek *Prunella modularis* recorded c.1.7km east and south-east of the site, respectively.
- 4.44 The hedgerow/tree, grassland and arable habitats are likely to provide opportunities for a range of generalist bird species and potentially specialist farmland/riparian bird species. A number of UK Biodiversity Action Plan (BAP)/S41 bird species were incidentally recorded during the 2012 survey comprising house sparrow *Passer domesticus*, dunnoek, skylark *Alauda arvensis* and common starling *Sturnus vulgaris*. Other bird species recorded were blue tit, *Cyanistes caeruleus*, great tit *Parus major*, chaffinch *Fringilla coelebs*, robin *Erithacus rubecula*, mistle thrush *Turdus viscivorus*, woodpigeon *Columba palumbus*, blackbird *Turdus merula*, jackdaw *Corvus monedula*, carrion crow *Corvus corone*, buzzard *Buteo buteo*, mallard *Anas platyrhynchos*, pheasant *Phasianus colchicus* and magpie *Pica pica*.

Reptiles

- 4.45 WBRC hold four records of grass snake *Natrix natrix* and one record of slow-worm *Anguis fragilis* for the search area, all of which occur over 1.5km from the site. There is one record of adder *Vipera berus* within grid square SP2056 over 1km east of the site.
- 4.46 Habitats within F4 alongside the canal provide opportunities for reptiles, which may potentially use the arable field margins although these are regularly sprayed off. The piles of debris and animal dung/compost provide opportunities for hibernation and egg-laying. A low population of grass snake has been confirmed within the field F4.

Amphibians

- 4.47 There are 11 great crested newt *Triturus cristatus* records within a 2km radius of the site boundary. A breeding pond is recorded c.900m south of the site from 2007. A further record relates to a count from 1997 of 100 individuals, located c.1.5km east of the site. Recent maps of the area show there to be no pond there currently, only commercial/industrial buildings. The remaining records are all historic dating from between 1979 to 1996 and occur over 1km from the Site.
- 4.48 WBRC also provided multiple records of smooth newt *Lissotriton vulgaris*, common toad *Bufo bufo* and common frog *Rana temporaria* within c.2km of the site. The closest of these occur c.600m from the Site and largely relate to built-up areas.

- 4.49 There are no ponds within the site itself, however the wet ditches on-site could provide suitable habitat for amphibians, and canals can be associated with frog and toad populations.
- 4.50 Natural England Guidelines¹¹ for great crested newts suggest that all ponds within 500m of a proposed development area should be assessed for great crested newt potential. With reference to OS maps and aerial imagery, a total of fifteen water-bodies, excluding the canal, were identified within 500m of the site boundary. Four of the ponds occur on the far side of the A46 from the site whilst the remaining 11 are separated by the Stratford-upon-Avon Canal, the railway line and/or Bishopton Lane to the east. It is considered that these form significant barriers to amphibian dispersal. Five of the ponds also appear to be connected to or associated with the Shottery Brook which reduces their suitability to support great crested newt.

Invertebrates

- 4.51 WBRC have provided eight records of small heath *Coenonympha pamphilus* butterfly (closest c.130m east of the site) and two records of white letter hairstreak *Satyrrium w-album* (c.750m north-east) within the search area, all from 1997.
- 4.52 Other notable invertebrate species recorded within 1km grid-squares comprising the site include alder flea-weevil *Orchestes testaceus* and several moth species including dot moth *Melanchra persicariae*, small square spot *Diarsia rubi*, shaded broad bar *Scotopteryx chenopodiata*, pretty chalk carpet *Melanthia procellata*, shoulder-striped wainscot *Mythimna comma*, rustic *Hoplodrina blanda* and lackey moth *Malacosoma neustria*.
- 4.53 The habitats comprising the site are typical of the wider area and could provide opportunities for a range of common invertebrates however there is no indication that a notable assemblage of species may be present. The common and widespread peacock *Aglais io*, small tortoiseshell *Aglais uticae* and speckled wood *Pararge aegeria* butterflies were noted incidentally on site during the initial extended Phase 1 survey in 2012.

Evaluation of Ecological Features

- 4.54 With reference to the evaluation criteria set out in the methodology, a range of factors have to be considered when evaluating the ecological features of a site. Table 6 provides a consideration of the features of the site against a checklist of potentially relevant factors as set out in the IEEM evaluation guidelines.

¹¹ English Nature (2001) *Great Crested Newt Mitigation Guidelines*. English Nature, Peterborough

Table 6. Evaluation Checklist

Factors	Status	Notes
Designated Sites and Features <ul style="list-style-type: none"> • Internationally important sites 	Absent	-
<ul style="list-style-type: none"> • Nationally important sites 	Present within 3km	Two SSSIs and one LNR occur within 3km of the site.
<ul style="list-style-type: none"> • Sites of lower level importance 	Present within vicinity	53 Ecosites are located within the search area of which several are also designated as LWSs or potential LWSs. Bishopton Lane pLWS and Stratford-upon-Avon Canal pLWS both border the site.
Hedgerows Regulations	Present	Seven hedgerows at the site qualify as Important under the Hedgerow Regulations with five assessed to be borderline
Biodiversity Value <ul style="list-style-type: none"> • Habitat designations 	Absent	-
<ul style="list-style-type: none"> • Non designated habitats of value or potential value 	Absent	-
<ul style="list-style-type: none"> • BAP/S41 List Habitats 	Present	The UK BAP habitats /S41 List for HAPS for hedgerows is relevant to the site. Canals, hedgerows and field margins are priority habitats under Warwickshire's HAP.
<ul style="list-style-type: none"> • Ancient Woodland 	Absent	-
<ul style="list-style-type: none"> • Protected species 	Present	Bats, badger, water vole, grass snake, breeding birds and potentially otter have been shown to use the habitats on-site.
<ul style="list-style-type: none"> • Rare species 	Potentially Present	There is potential for otter and water vole to use the site.
<ul style="list-style-type: none"> • Species records 	Present	Harvest mice have been recorded on site. A number of other notable species have been recorded within 1km.
<ul style="list-style-type: none"> • BAP/S41 List Species 	Present	A number of S41 species were incidentally recorded on-site during the site visit. The site has potential to support a number of additional notable species such as bats, reptiles and water vole.
Large populations/important assemblages of species	None identified	-
Potential Value	Present	Favourable management of the dense grassland within F4 would enhance habitats for water vole, reptiles and other wildlife.
Secondary or supporting value	Present	F4 provides a buffer to the Stratford-Upon-Avon Canal (pLWS) from intensive farmland.
Social/community value	Not assessed	-
Economic value	Not assessed	-
Legal issues	Present	Protected species issues are discussed herein.

- 4.55 The site comprises three arable fields under intensive cultivation. Arable habitats support notable farmland bird species, such as skylark which has been recorded on-site, and provides general opportunities for a range of wildlife such as small mammals. These habitats are considered to be suboptimal as a result of their intensive management and are valued at **Site** level.
- 4.56 All hedgerows at the site qualify as species-rich (for supporting five or more native woody species within a 30m stretch). Several also qualify as Important under the Wildlife and Landscape criteria of the Hedgerow Regulations, 1997 and are associated with features such as banks, ditches and mature trees. Hedgerows at the site, including the associated mature trees, are valued to be significant at a **Local to District** level. Hedgerows are listed as a priority habitat in the Warwickshire HAP as well as the UK BAP/S41 List.
- 4.57 The canal, whilst on the periphery of the site, is a valuable habitat providing in a corridor of associated vegetation suitable for a variety of species, this is valued at **District** level.
- 4.58 Initial survey evidence suggests that most of the grassland within the survey area is not of significant botanical interest. Many of the surrounding Ecosite grasslands are species rich, in contrast and so F3 and F4 are therefore considered to be of ecological value at the **Site** level. Semi-improved, rank grassland within F4 is known to have additional value to protected and notable species including reptiles, water vole and potentially otter. The grassland and tall ruderal habitats within F4 are considered to be of ecological value at the **Site** level.
- 4.59 There are a number of ditches at the site. These are largely dry and not associated with significant aquatic vegetation though provide opportunities for shelter and dispersal by wildlife. The wet ditch within F4, provides a potential resource for a variety of local terrestrial and aquatic/amphibious wildlife and is considered to be of value at the **Site** level.
- 4.60 The other habitats at the site, such as the scrub and tall ruderal areas, are considered to fall short of the criteria for features of ecological value but nonetheless still provide a number of opportunities for a range of local wildlife species.

5.0 DISCUSSIONS AND RECOMMENDATIONS

Potential Impacts and Further Survey Recommendations

- 5.1 Potential impacts to habitats and species have been identified with regards to broad development proposals. These entail the loss of the arable habitat and impacts to parts of some hedgerows to facilitate the mixed development, access and landscaping. Public open space, including a green buffer to the A46 corridor and pond creation (SuDS) are also proposed within northern parts of the site. Habitats within F4 are expected to be retained and managed as wildlife habitat, and as a buffer to the Stratford-upon-Avon Canal. Recommendations to avoid or reduce a given impact are provided, or where this is not practicable, possible options for mitigation are described.

Designated Sites

- 5.2 There are three statutory wildlife sites of national importance within 3km of the site. Given the nature and relative distance of these sites from the proposed development site, no direct or indirect impacts are anticipated.
- 5.3 Details of 53 locally important Ecosites were returned by WBRC for an approximate 5km area surrounding the site. The majority of these sites comprise small, private parcels of land noted for their wildlife interest or uncommon habitats. The Stratford-upon-Avon Canal and Bishopton Lane Ecosites occur adjacent to the proposed development site. These are also potential Local Wildlife Sites (LWS).
- 5.4 The Stratford-on-Avon canal is an important wildlife corridor with a variety of habitats supporting a relatively rich bird life. Development of the water front should be avoided, which could impact the immediate canal habitat and species, providing a suitable buffer in order to reduce potential impacts. The canal is a key feature for biodiversity protection and will need to be fully considered within the Construction Methods Statement for this site. Current proposals include retention of semi-natural habitat adjacent to the canal.
- 5.5 Whilst the tow path, and hence public access, is currently located on the opposite bank to the proposed development area, due to the proposed number of dwellings, there will inevitably be increased public activity close to the canal and it is recommended that measures be secured to guide and mitigate public access within this area. Where possible a strategy should be developed and agreed to accommodate this increased usage and, where practical, be tied to positive conservation management actions delivering firstly, ecological enhancements, and secondly protecting any specific habitats on the southern side of the canal, adjacent to the developed area. Additional areas of public open space are proposed throughout the development to absorb some recreational pressure.

- 5.6 The Bishopton Lane Ecosite 105/15 is also located immediately adjacent to the development. This site is currently exposed to direct impacts from traffic and pedestrian use on Bishopton Lane but this grassland verge will inevitably be impacted by the creation of a new site access and the associated loss or fragmentation of the hedgerow and verge.
- 5.7 The current proposals incorporate vehicular access into the site both from Bishopton and The Ridgeway. It is important that these access points are sensitively located in relation to any existing mature hedgerow trees, and that where sections of the established hedge are to be removed, equivalent native species rich planting is carried out elsewhere in the development in order to mitigate for this loss.
- 5.8 Cadle Farm Pasture (Ecosite 109/15) and Shottery Brook (Ecosite 85/15) are located approximately 20m and 40m from the site respectively, however the presence of the A46 and the canal would act as physical barriers reducing both direct and indirect impacts of the development on these areas. No direct or indirect impacts to other non-statutory wildlife sites are anticipated as a result of the proposed development.

Habitats

Arable

- 5.9 The majority of the site is composed of arable fields that are not considered to be of significant ecological value. However, there is potential for impacts to species such as declining farmland birds, which are discussed below.

Grassland

- 5.10 The ecological value of the semi-improved grassland next to the canal is not in itself considered to be botanically significant, however its value lies in the location of this natural habitat, together with the tall ruderal and scrub vegetation close to the water body and its subsequent use by protected species. These habitats combined offer a wide range of foraging and sheltering opportunities for a variety of fauna such as birds, water vole, reptiles and amphibians, as well as other species such as otter which utilise the canal corridor. As outlined above, it is recommended that F4 is retained in order to provide an element of protection to the canal and the species therein. Creation of a Landscape and Ecology Management Plan would benefit management of this area (and other retained and proposed habitats at the site) to maximise its value to reptiles and water vole. Specific measures relating to protected species are discussed below.
- 5.11 The current proposals indicate several areas of informal open space throughout the design, and where possible it is proposed that the grassland elements of these spaces are a low maintenance native grasses species mix, echoing the species present across the site, and that it is managed in places as meadow,

with an annual hay cut or in some areas left as 'rank' grassland to enable a range of species to colonise. Some of these seed mixes could include an element of wildflower seed to increase biodiversity and add to the aesthetic value of the landscape.

Hedgerows and trees

- 5.12 There are several mature species-rich hedgerows and mature trees at the site which are of ecological value. This network of features is important to a wide range of local wildlife for movement and dispersal and the design of the development should seek to retain the most significant habitat linkages wherever possible as currently indicated on the illustrative concept Masterplan. It is particularly important to allow wildlife to access the canal corridor and continuous links with the planted woodland belt to the south of the A46 trunk road.
- 5.13 It is understood that the proposed access to the site may impact small sections of the native hedgerows, including H7, H8 and H9 running along Bishopton Lane. Where any stretches of the hedgerow need to be damaged or removed it is recommended that weaker sections are chosen to be lost in preference to more intact or diverse segments. New native hedgerow planting should be undertaken to compensate for lost habitat.
- 5.14 A number of mature trees are scattered within the hedges of the survey area, many of these are of significant wildlife value and aesthetic appeal. Where feasible it is recommended that these are retained to enhance the biodiversity and visual appearance of the proposed development. The current Masterplan presents several areas of the site where additional trees and shrubs can be planted, thereby increasing the overall area of trees and the habitat they offer. A range of native species of local provenance should be included within the planting schedule to benefit wildlife.
- 5.15 Where hedgerows, mature and semi-mature trees are to be retained, a system of protection should be put in place to avoid accidental damage during construction. Arboricultural advice should be followed based on the guidance set out in BS5837:2012 - Trees in relation to design, demolition and construction. Recommendations¹².

Aquatic habitats

- 5.16 It is understood that there will be some water-bodies incorporated into the drainage design which will attenuate the flow of surface water and these can also provide new wetland habitats. Where possible, these should aim to incorporate a permanently wet core which can provide year-round habitat for aquatic wildlife.

¹² BSI (2012) British Standards. Trees in relation to construction – Recommendations. BS 5837:2012

- 5.17 As discussed above, no direct impacts to the canal habitats are anticipated from the development. However, appropriate measures should be put in place to avoid pollution and other indirect impacts to the canal itself and associated terrestrial habitats.

Protected/notable fauna

- 5.18 The potential for various protected/notable faunal species to occur within this site has been identified. A number of further surveys have been undertaken which has confirmed the presence of bats, badger, water vole, otter, notable birds and reptiles within or adjacent to the site. Full details for avoidance, mitigation and compensation are provided within the Protected Species Report, however broad options are discussed herein.

Bats

- 5.19 Records from WBRC and the results of detailed bat surveys in 2012-13 show that a variety of bat species are present on-site and in the local area. The hedgerows and trees at the site, as well as the aquatic habitats, are of particular importance to bats for commuting and foraging. A number of trees at the site also support bat roosting potential.
- 5.20 All species of bats and their roosts are protected in the UK under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2010. Amongst other things, this legislation make it illegal to intentionally or deliberately kill, injure or capture bats; deliberately or recklessly disturb bats or to damage, destroy or obstruct access to bat roosts.
- 5.21 If trees identified to support bat roosting potential are to be impacted by development, further aerial inspections or targeted nocturnal species should be undertaken to ensure no loss or disturbance to bat roosts. If impacts to bat roosts cannot be reasonably avoided, , it will be necessary to obtain a European Protected Species (EPS) licence from Natural England to authorise works that would otherwise be illegal. A detailed bat mitigation strategy would also need to be drawn up and agreed as part of the licence application.
- 5.22 Current proposals will impact parts of some hedgerows, fragmenting flight paths used by bats. Total losses should be minimised and replacement native tree and/or hedgerow planting provided to re-link vegetation and boundaries where possible. The proposed green buffer along the northern boundary of the site would strengthen and enhance foraging areas/flight lines for bats in this part of the site and provide a connector to adjoining hedgerows.
- 5.23 Careful consideration should be given to the future lighting design for the proposed development to avoid additional impacts to bats and other wildlife. External lighting should be kept to a minimum along the boundary hedgerows, wooded belt and any additional native shrub or tree planting; upward lighting

and light spill should also be avoided, in line with Bat Conservation Trust (BCT) guidance¹³.

Badgers

- 5.24 No badger setts were identified within or adjacent to the proposed development area. However, the site offers potential foraging opportunities for badgers and evidence of badger activity on-site was found. There will be changes to the habitat types currently utilised by badgers with loss of arable land and scattered scrub. However, the majority of hedgerows will be retained and proposed thicket planting and public open space is considered to provide replacement foraging opportunities for badgers. Pesticides (including molluscicides) should be avoided within landscaped areas.

Otter

- 5.25 Evidence of otter has been found on the Bishopton Lane canal bridge adjacent to the site in 2014 confirming that otters utilise this stretch of the Stratford-upon-Avon Canal. Otters are likely to be foraging along the entire length of the canal and adjoining River Avon with the bridge used as a regular sprainting site. There is potential for otter to rest or make above-ground shelters within the dense, tall grassland within F4 which is largely undisturbed, though no signs of otter have been found on-site.
- 5.26 Otters receive strict legal protection under the Wildlife and Countryside Act and the Habitats Regulations, and are a European Protected Species. This makes it an offence to deliberately capture, injure or kill an otter; deliberately or recklessly disturb otters, impairing their ability to survive, breed, reproduce or rear/nurture their young; damage or destroy a breeding site or resting place used by otters and; intentionally or recklessly obstruct access to any structure or place that an otter uses for shelter or protection.
- 5.27 Where development is proposed that would result in an offence under the Habitats and Species Regulations a European Protected Species (EPS) licence needs to be granted by the appropriate authority (Natural England in England) to permit an act that would otherwise be unlawful.
- 5.28 Habitats within F4 are proposed as public open space with some element of public access. It is recommended that the routes of any new paths within this area are designed with consideration for the presence of otters along the canal. Public access should be avoided within 10m of the banks and the potential for fencing should be considered to limit disturbance to wildlife using the bankside habitats.

¹³ Bat Conservation Trust (2009). Bats and Lighting in the UK [online]. Available at: http://www.bats.org.uk/data/files/bats_and_lighting_in_the_uk_final_version_version_3_may_09.pdf. Accessed: 2012

- 5.29 It is recommended that an update survey of F4 is undertaken prior to the commencement of works to ensure that no new holts/resting places have been established which might be impacted.

Water voles

- 5.30 Evidence of water vole was found within F4 during a visit to the site in 2014. Anecdotal evidence suggests that this species has been expanding its range locally and there is good potential for water vole to utilise grassland and ditch habitats adjacent to the canal.
- 5.31 It is an offence under the Wildlife and Countryside Act, 1981 (as amended) to intentionally kill, injure or take water voles, and to intentionally or recklessly damage, destroy or obstruct access to any place used for shelter or protection or to disturb a water vole whilst using such a place.
- 5.32 It is considered that the proposed wildlife area within F4 will provide an adequate buffer to the canals from the development. There is anticipated to be some public access to this area however and it is recommended that a suitable margin (c.10m) is left between the canal banks and footpath routes to minimise disturbance. Water voles could use grassland/ditch anywhere within the grassland, whilst disturbance of this species is not illegal, it is recommended that some sections of the open areas adjacent to the canal and within F4 are retained as relatively inaccessible undisturbed areas where public access is discouraged to minimise disturbance to water vole.
- 5.33 It is recommended that an update survey of F4 is undertaken prior to the commencement of works to ensure that no new burrows have been established which might be impacted.

Birds

- 5.34 WBRC has provided local records of a number of notable bird species. The site has been found to support a range of generalist and farmland specialist bird species including skylark. There will be a net loss of crop habitat available for seed-eating/farmland bird species.
- 5.35 Provision of replacement hedgerow planting, public open space and landscaping will mitigate against impacts to other habitat types. Detailed options for mitigation are provided within the Protected Species Report.
- 5.36 It should be noted that in the U.K., all wild birds, their nests and their eggs are protected by law under the Wildlife and Countryside Act. Therefore, the removal of any vegetation which may be used by birds for nesting, should avoid the period between March and August (inclusive) when nesting birds may be present.

Reptiles

- 5.37 Four records of reptiles have been provided by WBRC for the search area and the rough grassland and scrub areas at the site were considered to have potential to support widespread reptile species. A low population of grass snake was identified within F4.
- 5.38 All British reptile species are listed within Schedule 5 of the Wildlife and Countryside Act 1981 and are afforded protection against killing and injury under parts of sub-section 9(1) of the Act. Although habitats within this area are anticipated to be retained, a mitigation strategy will be required to ensure that killing and injury of reptiles is avoided during the development and that appropriate management regimes are employed post-construction.
- 5.39 The creation of ponds and connecting thicket, hedgerows and open space would allow reptiles to colonise other areas of the site.

Amphibians

- 5.40 There are no ponds within the redline boundary, the wet ditches identified on-site provide some limited potential for use by amphibians. However, the site is surrounded by residential areas, the Stratford-on-Avon canal and the A46 creating a significant barrier to the site for any local great crested newt populations.
- 5.41 As described above, in accordance with Natural England guidelines, all ponds within 500m of the proposed development boundary were assessed during the desktop study. This search revealed 15 ponds within 500m, however all are separated either by the A46 trunk road or canal which are considered to act as barriers to amphibian dispersal if present locally.
- 5.42 There is not considered to be any constraint to the development from great crested newt. General opportunities to avoid impacts to other amphibian species, and proposals for habitat enhancement measures are discussed below.

Invertebrates

- 5.43 The site has potential to support a range of common and widespread invertebrate species within the hedgerows and the canal corridor and its associated habitats. However, significant areas of these habitats will be retained, therefore the invertebrate population associated with hedgerows and the canal will not be impacted as part of the proposed development. In addition, the majority of the site is currently under intensive arable cultivation and probably subject to pesticide application at certain times of year and considered to offer limited potential for invertebrates, whereas the proposed landscaping schemes will provide an overall increase in tree and shrub planting, areas of wildflowers together with residential gardens which are generally known to support a wide range of invertebrates.

- 5.44 It is recommended that the rough grassland hedgerow margins be retained as 'wildlife corridors'. Ideally, supplementary wildflower planting should be incorporated into the landscape/planting strategy to improve the diversity of the grassland areas and the continuity of grassland to other suitable habitats such as tree and shrub thickets.

Opportunities for Ecological Enhancement

- 5.45 It is recommended that the majority of hedgerows should be managed to provide a variety of growth-stages by alternating cutting regimes to benefit birds, small mammals and invertebrates. Where new hedges and shrub and tree planting is proposed it is recommended that a native species of local provenance be planted to extend the habitat of value available to woodland/scrub specialist species. Infilling existing gaps in hedgerows with native woody species would enhance their structure and diversity, with benefits for a range of wildlife.
- 5.46 Creation secluded areas/limited disturbance in the retained F4 for water vole and otter by carefully designed planting or sensitive fencing, encouraging use of alternative areas by the public.
- 5.47 The landscaping scheme for the residential housing/garden areas should include native plants, where possible, and should consider the list of suitable species provided in the Natural England leaflet 'Plants for wildlife-friendly gardens'¹⁴ as these will provide valuable foraging and sheltering opportunities for invertebrates as well as other species. Inclusion of night-scented varieties attractive to night-flying insects would provide foraging opportunities for bats. A range of suitable species is given within the Bat Conservation Trust guide "Encouraging Bats"¹⁵.
- 5.48 Provision of bat boxes on retained trees or externally/integrally within the walls of new buildings. Boxes can be chosen to benefit a range of species and are maintenance-free. The placement and provision of bat boxes should be informed from further bat surveys.
- 5.49 Provision of additional bird boxes to provide enhanced opportunities for declining urban/farmland species including house sparrow *Passer domesticus*, swallow, swift *Apus apus* and house martin *Delichon urbica*.
- 5.50 It is recommended that wood from any management or clearance activities at the site is left in small piles within the wooded area or hedgerow bases to form habitat piles. This will provide foraging opportunities for saproxylic invertebrates as well as sheltering or hibernation opportunities for other species.

¹⁴ Plants for wildlife-friendly gardens available online at <http://naturalengland.communis.com/naturalenglandshop/docs/NE29.pdf>

¹⁵ Bat Conservation Trust, 2012. Encouraging Bats. A guide for bat-friendly gardening and living. BCT, London

6.0 SUMMARY AND CONCLUSIONS

- 6.1 The proposed development site is not within or adjacent to any statutory wildlife sites. There are 53 Ecosites of local wildlife importance within c.5km, two of which occur adjacent to the site: the Bishopton Lane Verge pLWS and Stratford-upon-Avon Canal pLWS. An undeveloped buffer area is proposed adjacent to the canal which should avoid direct impacts to the Ecosite. Avoidance and mitigation measures for wildlife using the canal are discussed separately. With consideration to Bishopton Lane Ecosite suitable enhancement and mitigation is recommended where the hedgerow may be breached to access the site in the form of additional native species hedgerow planting. It is understood that public open spaces for recreation and leisure activities as well as suitable drainage designs are included within the development proposals. If all these measures are suitably implemented, it is believed that the development will result in no significant adverse impact to the statutory or non-statutory wildlife sites.
- 6.2 The majority of the site comprises arable farmland and semi-improved grassland margins of limited ecological value. However the habitats within F4 provide an extension to the canal corridor and are known to be used by protected and rare species. This habitat is due to be retained, however it is recommended that a Landscape and Ecology Management Plan be prepared to ensure the effective and sensitive management of this area for wildlife. The hedgerows are considered to be of value between the local and district level depending on their species make up and features. All hedgerows are species-rich and several qualify as Important using the Wildlife and Landscape and/or Archaeological criteria within the Hedgerow Regulations 1997. Some impacts to hedgerows at the site are anticipated. Prescriptions to mitigate and compensate for these impacts, where necessary, are discussed herein.
- 6.3 Further surveys have been undertaken at the site for bats, breeding birds, badger, water vole and otter, and reptiles. Following completion of these surveys, full assessment of potential impacts to species at the site has been provided within a separate Protected Species Report (CSa/1957/06) along with more specific recommendations for mitigation and enhancement.

Appendix A

MAGIC Database Site Check Report and Plan

DRAFT

Site Check Report Report generated on Fri May 23 2014
You selected the location: Centroid Grid Ref: SP179559
The following features have been found in your search area:

Local Nature Reserves (England)

Reference

1009345

Name

WELCOMBE HILLS

Hectares

59.62

Hyperlink

http://www.lnr.naturalengland.org.uk/special/lnr/lnr_details.asp?themeid=1009345

Sites of Special Scientific Interest (England)

Name

COPMILL HILL

Reference

1002261

Natural England Contact

KIMBERLEY PARSONS

Natural England Phone Number

0845 600 3078

Hectares

11.51

Citation

1001262

Hyperlink

http://www.sssi.naturalengland.org.uk/special/sssi/sssi_details.cfm?sssi_id=1001262

Name

RACECOURSE MEADOW

Reference

1007188

Natural England Contact

HELEN TRAPP

Natural England Phone Number

0845 600 3078

Hectares

1.66

Citation

2000249

Hyperlink

http://www.sssi.naturalengland.org.uk/special/sssi/sssi_details.cfm?sssi_id=2000249

National Nature Reserves (England)

No Features found

Appendix B

Summary of Non-Statutory Wildlife Sites from WBRC 2014
(Data and maps available on request – WBRC copyrights apply)

DRAFT



Date: 09/06/2014
Our Ref: CSA5209
Your Ref: -

Name: Hannah Willis
Company / Organisation: CSa Environmental

Site Name: Bishopton Stratford
Grid Reference: SP 1802 5599
Site Area: 5km x 5km grid

Ben Wood
 Ecological Assistant
 Warwickshire Biological Records Centre
 Museums and Natural Environment
 WCC, PO Box 43
 Warwick CV34 4SX
 Tel: 01926 418060
 wbrc@warwickshire.gov.uk
<http://heritage.warwickshire.gov.uk/ecology>

Site Brief Descriptions

<p>Ecosite 08/15 Billesley Brake</p>	<p>Identified as a potential Local Wildlife Site (pLWS). Site of County value.</p> <p>Ancient and semi-natural woodland which was formerly an SSSI, but was denotified in 1986). The woodland is oak <i>Quercus robur</i> and ash <i>Fraxinus excelsior</i> with an understory of field maple <i>Acer campestre</i>, hawthorn <i>Crataegus monogyna</i>, elder <i>Sambucus nigra</i>, blackthorn <i>Prunus spinosa</i>, hazel <i>Corylus avellana</i>, holly <i>Ilex aquifolium</i> and elm <i>Ulmus sp.</i> The ground flora is sparse with locally dominant common nettle <i>Urtica dioica</i> and dog's mercury <i>Mercurialis perennis</i>. Also present are enchanter's-nightshade <i>Circaea lutetiana</i>, hedge woundwort <i>Stachys sylvatica</i>, lords and ladies <i>Arum maculatum</i>, wood avens <i>Geum urbanum</i>, giant fescue <i>Festuca gigantea</i>, wood sedge <i>Carex sylvatica</i> and three-nerved sandwort <i>Moehringia trinervia</i> (Data from 1983 survey).</p>
<p>Ecosite 12/15 River Avon</p> <p>LWS LGS (W)</p>	<p>Designated as a Local Wildlife Site (LWS). A small area of this site in 12/15W passes through the River Avon, Stratford Racecourse Local Geological Site (LGS, not in this search area).</p> <p>An extremely important river corridor. Habitats include open water, banks and adjacent ecological features. A number of the county's most important meadows are located within the flood plain of the Avon. The river also supports Warwickshire's returning otter <i>Lutra lutra</i> population.</p> <p>This ecosite crosses tetrads A, F, G, K, L, R, W. Only section W passes through the search area.</p>

<p>Ecosite 13/15 Roadside verge B439 nr Dodwell</p>	<p>Nature conservation status ungraded.</p> <p>Wide flat grassy roadside verges, with deep ditches. Bordered by hawthorn <i>Crataegus monogyna</i> hedges, the flora includes cock's-foot <i>Dactylis glomerata</i>, ribwort plantation <i>Plantago lanceolata</i>, crested dog's tail <i>Cynosurus cristatus</i>, common cat's <i>Hypochaeris radicata</i> ear and water figwort <i>Scrophularia auriculata</i>. The lay-by is planted with lime <i>Tilia sp</i>, weeping willow <i>Salix babylonica</i>, cherry <i>Prunus sp</i>, whitebeam <i>Sorbus aria</i> and sycamore <i>Acer pseudoplatanus</i>.</p>
<p>Ecosite 14/15 Stratford-upon-Avon Canal</p>	<p>Identified as a potential Local Wildlife Site (pLWS). Variable ecological value ranging from Parish value to County value. A section of the canal is a registered British Trust for Ornithology (B.T.O.) site.</p> <p>The canal provides an important wildlife corridor passing through open countryside and within urban areas. In addition to the open water and marginal/emergent vegetation, the canal corridor in places includes areas of semi-improved grassland, coarse grassland and scrub as well as boundary hedgerows.</p>
<p>Ecosite 15/15 Old field and spinney at Shottery and Anne Hathaways Cottage</p>	<p>Part of this site in the SW corner, has been identified as a potential Local Wildlife Site (pLWS).</p> <p>The site includes the land adjacent to Shottery Brook, with a meadow, marshy grassland, woodland, orchard and a pond present. The meadow has crested dog's-tail <i>Cynosurus cristatus</i>, false oat-grass <i>Arrhenatherum elatius</i>, cock's-foot <i>Dactylis glomerata</i>, timothy <i>Phleum pratense</i>, yarrow <i>Achillea millefolium</i>, upright hedge parsley <i>Torilis japonica</i> and creeping thistle <i>Cirsium arvense</i>. The woodland is ash <i>Fraxinus excelsior</i> and hawthorn <i>Crataegus monogyna</i>.</p>
<p>Ecosite 21/15 Oak Farm Wood</p>	<p>Identified as a potential Local Wildlife Site (pLWS).</p> <p>An oak <i>Quercus robur</i>, ash <i>Fraxinus excelsior</i> and coppiced hazel <i>Corylus avellana</i> wood.</p>
<p>Ecosite 24/15 Burton Farm Embankment</p>	<p>Nature conservation status ungraded. Parts of the site are of local value, parts of district value.</p> <p>Embankment of Stratford Canal (Ecosite 14/15).</p> <p>The planted embankment is thought to be of local value to butterflies, whilst the adjacent towpath grassland and adjacent hedges are of further wildlife value.</p>

<p>Ecosite 29/15 Seven Meadows & Avon Meadow SSSI Part SSSI</p>	<p>A large grassland site. Racecourse Meadow in the west of this site is designated as a Nationally important Site of Special Scientific Interest (SSSI). Stratford-upon-Avon Steeplechase Course, a part of the site adjacent to the SSSI, is designated as a Local Wildlife Site (LWS). The majority of the remainder is identified as potential Local Wildlife Sites (pLWS).</p> <p><u>Racecourse Meadow Site of Special Scientific Interest:</u> Unimproved field, herb-rich neutral grassland with a characteristic flood meadow community of meadow foxtail <i>Alopecurus pratensis</i>, great burnet <i>Sanguisorba officinalis</i>. Density and variety of sward is exceptionally high with great burnet, common knapweed <i>Centaurea nigra</i>, meadow buttercup <i>Ranunculus acris</i>, creeping buttercup <i>Ranunculus repens</i>, lady's bedstraw <i>Galium verum</i>. Uncommon species include pepper saxifrage <i>Silaum silaum</i> and corn parsley <i>Petroselinum segetum</i> (only known in 4 sites in Warwickshire).</p> <p><u>Remainder of Seven meadows outside the SSSI:</u> Stratford racecourse has a large area of amenity grass which occupies its eastern half. The western half with varied habitats including hedges and a small spring. Best area in the extreme west is a series of fields separated from each other by linear scrub of hawthorn <i>Crataegus monogyna</i> (one of these meadows in Racecourse Meadow SSSI). Grasses include perennial ryegrass <i>Lolium perenne</i>, cock's-foot <i>Dactylis glomerata</i>, yorkshire fog <i>Holcus lanatus</i> and crested dog's-tail <i>Cynosurus cristatus</i>. Herbs frequent include great burnet, lady's bedstraw, and knapweed. The large central racecourse area is largely relatively poor semi-improved grassland.</p>
<p>Ecosite 39/15 E. roadside verge, A3400 Stratford to Wootton Wawen</p>	<p>Identified as a potential Local Wildlife Site (pLWS).</p> <p>Species rich roadside verge with a good range of flora, tall herbs and a hawthorn hedge.</p>
<p>Ecosite 46/15 Field south of Drayton Farm</p>	<p>Although identified as a potential Local Wildlife Site (pLWS), the site was recently rejected by the LWS panel (Still marked on map as pLWS).</p> <p>A small area of semi-improved grassland, false oat-grass <i>Arrhenatherum elatius</i> and rough meadow-grass <i>Poa trivialis</i> are both abundant with frequent cock's-foot <i>Dactylis glomerata</i>, yorkshire fog <i>Holcus lanatus</i> and meadow foxtail <i>Alopecurus pratensis</i>. Herbs include creeping thistle <i>Cirsium arvense</i>, hogweed <i>Heracleum sphondylium</i>, creeping buttercup <i>Ranunculus repens</i> and meadow vetchling <i>Lathyrus pratensis</i>.</p>

<p>Ecosite 51/15 Mason's Croft</p>	<p>Nature conservation status ungraded. A registered British Trust of Ornithology (BTO) site. Site of parish value.</p> <p>The site consists of a small formal garden and a playing field in the centre of Stratford. It provides an important feeding and nesting area for many bird species due to its range of mature trees and good ground flora.</p>
<p>Ecosite 54/15 Newfoundland wood</p>	<p>Identified as a potential Local Wildlife Site (pLWS).</p> <p>Remains of a small deciduous woodland that has been part-cleared in the past giving rough grassland and tall herb communities. The site has been good for birds. There are oak, birch and ash remains in the hedge at the northern end. The ditch in the centre is deep and has little aquatic vegetation. The main body of the wood is ash with some oak, birch, beech, cherry and some spruce. The understory is elder with a ground flora of nettle, ivy and some enchanter's nightshade. The southern end is more open and has tall herbs and grasses, including hairy brome, burdock and hairy St John's wort.</p>
<p>Ecosite 55/15 Ouse Brook and Meadows</p>	<p>Nature conservation status separately ungraded; included within River Avon LWS.</p> <p>Originally a small stream with hedgerows and adjacent meadows, which is a good wildlife corridor. The area also has mature ash <i>Fraxinus excelsior</i>, field maple <i>Acer campestre</i> and hawthorn <i>Crataegus monogyna</i> scrub with associated flora, a small overgrown area with tall herbs and semi-improved grassland. HBA data shows most of the grassland is now scrub or new plantations.</p>
<p>Ecosite 57/15 Warren Chase Water</p>	<p>Identified as a potential Local Wildlife Site (pLWS).</p> <p>Warren Chase Water (Lake near Copham's Hill). A lake created around 1975 as a trout fishery. There is an earth bank on the SE/NE sides. Sympathetic management enhances its potential and developing value for wildlife. Some submerged vegetation, predominantly water milfoil and canadian pondweed with some algae, also some hard rush and yellow iris in clumps along the edges of the water, but mainly devoid of aquatic vegetation, though other aquatic and emergent species have included common spike-rush, hairy St John's wort and spiked water milfoil. The less steep banks are mown regularly. The steeper banks contain yorkshire fog, perennial rye grass, creeping thistle, perennial sow thistle, and teasel. A small island in the middle of the lake has willows growing on it. This site is a good habitat for birds and butterflies.</p>

<p>Ecosite 60/15 Disused Railway, Broom Junction, Stratford upon Avon and Fenny Compton</p>	<p>Disused railway line with high wildlife value in some sections. Part of this site is designated a Local Wildlife Site (LWS, not within search area). Some other sections are identified as potential Local Wildlife Sites (pLWS).</p> <p><u>Tetrad R</u> Local Wildlife Site (LWS) and Luddington Railway Cutting 'Nature Reserve'. A short length of former railway, the site is an important feature of local nature conservation interest as it provides an area of relatively undisturbed habitat in an otherwise intensively managed agricultural environment.</p> <p>Plants recorded include ox-eye daisy <i>Leucanthemum vulgare</i>, greater and black knapweed <i>Centaurea scabiosa</i>, <i>Centaurea nigra</i>, perforate st. john's wort <i>Hypericum perforatum</i>, yellow rattle <i>Rhinanthus minor</i> and bird's-foot trefoil <i>Lotus corniculatus</i>. A pond in part of the former cutting supports small populations of great crested newt <i>Triturus cristatus</i> and smooth newt <i>Lissotriton vulgaris</i>. A good range of bird and mammal species have been recorded. Beyond the 'nature reserve', sections surveyed are recorded as semi-improved grassland with coarse grasses such as false oat-grass <i>Arrhenatherum elatius</i> and cock's-foot <i>Dactylis glomerata</i>. In parts, bramble <i>Rubus fruticosus</i> scrub is invading, with nettle <i>Urtica dioica</i>, dock <i>Rumex sp.</i>, and spear thistle <i>Cirsium vulgare</i>. However, long stretches have not been surveyed.</p> <p><u>Tetrad W</u> Bordon Hill Cutting with steep banks. Range of trees/shrubs on banks including hawthorn, rose <i>Rosa sp.</i>, elder <i>Sambucus nigra</i> and blackthorn <i>Prunus spinosa</i>. Dense bramble scrub in places. Little ground flora present.</p>
<p>Ecosite 64/15 Bordon Hill Old Rifle Range LWS</p>	<p>Part of this site is designated as a Local Wildlife Site (LWS), and part has been identified as a potential Local Wildlife Site (pLWS). Site of County nature conservation value.</p> <p>Species rich calcicolous grassland also of particular importance for its beetle fauna.</p> <p>Open area surrounded by dense scrub becoming colonised by hawthorn, rose, wild privet, way-faring tree and ash. The grasses are generally kept short, apparently by rabbits, but include tor-grass <i>Brachypodium pinnatum</i>, cock's-foot <i>Dactylis glomerata</i> and yorkshire fog <i>Holcus lanatus</i>. A variety of forbs is present including ragwort, agrimony, black knapweed, self-heal, black medick, red bartsia, fairy flax, upright hedge parsley, eyebright, perforate St. John's-wort, tall melilot and wild carrot. Occurring less frequently are common centaury, yellow-wort, woolly thistle, creeping restharrow, dwarf thistle and common calamint.</p> <p>Beetle species include Red Data Book species, Nationally notable and Regional scarce species (including only known Warwickshire records). Value for other invertebrates not assessed yet.</p> <p>NB: Part of site ploughed in 1999.</p>

<p>Ecosite 69/15 Drayton Bushes.</p>	<p>Nature conservation status ungraded. County value.</p> <p>Semi-natural oak <i>Quercus sp</i> and ash <i>Fraxinus excelsior</i> woodland, at the edges the understory is quite sparse consisting of mostly hawthorn <i>Crataegus monogyna</i> and some elder <i>Sambucus nigra</i>. Here the ground flora is predominantly garlic mustard <i>Alliaria petiolata</i>. Further into the woodland the understory becomes denser, largely with elder, and is accompanied by ash regeneration. A very large rookery is present</p>
<p>Ecosite 70/15 Woodland by Churchill</p>	<p>Identified as a potential Local Wildlife Site (pLWS).</p> <p>Woodland dominated by oak <i>Quercus robur</i> and hawthorn <i>Crataegus monogyna</i>, with elder <i>Sambucus nigra</i> and blackthorn <i>Prunus spinosa</i> in the understory. There is abundant bramble <i>Rubus fruticosus</i> in the ground flora. In the east of the site there has been some new planting.</p>
<p>Ecosite 74/15 Park Wood LWS</p>	<p>Designated a Local Wildlife Site (LWS). District Value. Listed on English Nature's Ancient Woodland Inventory.</p> <p>Oak <i>Quercus robur</i> and ash <i>Fraxinus excelsior</i> standards, with hazel <i>Corylus avellana</i> coppice, hawthorn <i>Crataegus monogyna</i> and elder <i>Sambucus nigra</i>. The ground flora is dominated by bluebell <i>Hyacinthoides non-scripta</i>.</p>
<p>Ecosite 78/15 Cadle Pool Wood.</p>	<p>Nature conservation status ungraded. Site of Local Value.</p> <p>Once an open wood, now partly grassland. The area of woodland closest to the road is a semi-natural broad-leaved woodland with ash <i>Fraxinus excelsior</i>, oak <i>Quercus sp</i>, birch <i>Betula sp</i> and some white poplar <i>Populus alba</i>. The understory is dominated by elder <i>Sambucus nigra</i> scrub and the ground flora is sparse. The half of the wood further from the road is a coniferous plantation with larch <i>Larix sp</i> and spruce <i>Picea sp</i> planted very close.</p>
<p>Ecosite 80/15 Field adj. Featherbed Lane Bridge</p>	<p>Identified as a potential Local Wildlife Site (pLWS).</p> <p>Meadow dominated by tall grasses including false oat-grass <i>Arrhenatherum elatius</i> and Yorkshire fog <i>Holcus lanatus</i>. A large part of the field contains creeping thistle and black knapweed. Other species recorded include melilot, meadow vetchling and red clover.</p>
<p>Ecosite 82/15 Upper Billesley Wood</p>	<p>Nature conservation status ungraded.</p> <p>The western end of the wood is a conifer plantation of pine <i>Pinus sp</i> and spruce <i>Picea sp</i>. The south-east end is broad-leaved with poplars <i>Populus sp</i> dominant. There is little ground flora.</p>

<p>Ecosite 85/15 Shottery Brook</p>	<p>This is an extensive network of tributaries which are part of the River Avon Local Wildlife Site (LWS). Site varies from Parish to District value.</p> <p>The brook, which is mainly within the urban area of Stratford-upon-Avon, has some aquatic flora and bankside emergent vegetation, as well as sections lined with a good range of trees and hedges.</p>
<p>Ecosite 86/15 The Cage Meadow</p>	<p>Identified as a potential Local Wildlife Site (pLWS).</p> <p>Unimproved grassland bordered by a conifer wood and hedgerow. Species recorded in the grassland include include lady's bedstraw <i>Galium verum</i>, agrimony <i>Agrimonia eupatoria</i>, primrose <i>Primula vulgaris</i>, yellow rattle <i>Rhinanthus minor</i>, black knapweed <i>Centaurea nigra</i>, salad burnet <i>Sanguisorba minor</i> and wild thyme <i>Thymus serpyllum</i>.</p>
<p>Ecosite 87/15 Fields at Caravan site 141 Aston Cantlow Rd, Wilmcote</p>	<p>Identified as a potential Local Wildlife Site (pLWS).</p> <p>A small area of land which, until 1985, was thick hawthorn scrub with no ground flora. The site was cleared (apart from two thickets and some young trees) to allow the ground flora to regenerate. It now has a very rich diversity of ground flora including orchids, thistle, willowherb, dock, centaury, cowslip, wild basil, greater knapweed, field scabious, hairy St John's wort, prickly lettuce, red bartsia, ox-eye daisy, violets, wild carrot and wild parsnip.</p>
<p>Ecosite 89/15 Wildmoor</p>	<p>Identified as a potential Local Wildlife Site (pLWS). Probably District value.</p> <p>The field contains ridge and furrow and is grazed by cattle. Grasses include wall barley <i>Hordeum murinum</i>, yorkshire fog <i>Holcus lanatus</i> and timothy <i>Phleum pratense</i>. Creeping thistle <i>Cirsium arvense</i> is abundant especially near the road. The more species rich areas have cowslip <i>Primula veris</i>, agrimony <i>Agrimonia eupatoria</i>, lady's bedstraw <i>Galium verum</i> and ragwort <i>Senecio sp.</i> The farm access verge off the A46 by this field is also part of the site.</p>
<p>Ecosite 91/15 Wilmcote Parish Church</p>	<p>Nature conservation status ungraded.</p> <p>Churchyards support a range of flora including hautbois strawberry, violet, welsh poppy, slender speedwell and large periwinkle. The hedgerow bordering it is believed to be the last site in the county for the very rare dwarf elder</p>
<p>Ecosite 93/15 Stratford-upon-Avon Cemetery</p>	<p>Nature conservation status ungraded. Possible of Parish value.</p> <p>An interesting cemetery which supports a wide range of flora. We have little information on this site. However, recorded species include yarrow, lady's smock, ox-eye daisy, bluebell, bird's-foot trefoil and dog violet.</p>

<p>Ecosite 98/15 Disused railway, Milcote, 'The Greenway'</p>	<p>Identified as a potential Local Wildlife Site (pLWS). Site of county value.</p> <p>A wildlife corridor, the site is used for both cycling and walking. The site is of importance for plants and invertebrates.</p>
<p>Ecosite 99/15 Railway, Wilmcote</p>	<p>Nature conservation status ungraded. Probably of local value.</p> <p>This site transects tetrads T, U, X and Y, all of which are included in the search area. We have very little information on this railway line. The line is still in use and wildlife interest is probably restricted to embankments and cuttings with semi-improved grassland, tall herb and scrub.</p> <p>Although we have no records, anecdotal information suggests the embankments and cuttings may be used by badgers.</p>
<p>Ecosite 100/15 Woodland near Bishopton Lodge</p>	<p>Identified as a potential Local Wildlife Site (pLWS).</p> <p>Small area of broadleaved woodland with oak <i>Quercus sp</i> and ash <i>Fraxinus excelsior</i> standards and an understory also containing hawthorn <i>Crataegus monogyna</i> and hazel <i>Corylus avellana</i>. The ground flora included garlic mustard <i>Alliaria petiolata</i>, ivy <i>Hedera helix</i>, herb robert <i>Geranium robertianum</i> and violet <i>Viola sp</i>. There is also a small ditch running along the edge of the site.</p>
<p>Ecosite 101/15 Pasture near Bishopton Lodge</p>	<p>Nature conservation status ungraded.</p> <p>Species rich semi-improved pasture until it was ploughed in 1994, the site is now recorded as improved grassland.</p>
<p>Ecosite 103/15 Bishopton Hamlet</p>	<p>Nature conservation status ungraded. Parish value.</p> <p>Poor semi-improved grassland with a caravan site on the eastern half. It contained yorkshire fog <i>Holcus lanatus</i>, false-oat grass <i>Arrhenatherum elatius</i>, cock's-foot <i>Dactylis glomerata</i> and perennial rye-grass <i>Lolium perenne</i>. Creeping thistle, hemlock and meadowsweet were all frequent with fig-leaved goosefoot, great willowherb, common sorrel and common ragwort all present. (HBA 1997).</p>
<p>Ecosite 104/15 The Triangle and Hedgerow</p>	<p>Identified as a potential Local Wildlife Site (pLWS).</p> <p>A mature derelict hedge with much hawthorn <i>Crataegus monogyna</i>, there is also wild privet <i>Ligustrum vulgare</i>, elder <i>Sambucus nigra</i>, crab apple <i>Malus sylvestris</i>, field maple <i>Acer campestre</i>, elm <i>Ulmus sp</i> and dogwood <i>Cornus sanguinea</i>. Ash <i>Fraxinus excelsior</i> standards are scattered along its length and there is a ditch which becomes deeper to the north.</p>

<p>Ecosite 105/15 Bishopton Lane</p>	<p>Identified as a potential Local Wildlife Site (pLWS). Parts of District value, parts of Local value.</p> <p>The roadside contains a number of hedges which are likely to be of good ecological value, whilst a small area at the northern end includes associated grassland and tall herbs.</p>
<p>Ecosite 106/15 Racecourse Brook LWS</p>	<p>Designated a Local Wildlife Site (LWS). Site is of parish value.</p> <p>We have very little information on this brook, much of it relates to a moth survey along its banks. The stream flows through a number of important grassland and invertebrate sites to the south and as such will be an important wildlife corridor.</p>
<p>Ecosite 107/15 Field A06 South East (Bishopton)</p>	<p>Nature conservation value ungraded. Previously of County value.</p> <p>Although previously considered to be species rich semi-improved meadow/pasture, it was ploughed in 1995 and its current status is not known.</p>
<p>Ecosite 108/15 Drayton Brook LWS</p>	<p>Forms part of the River Avon Local Wildlife Site (LWS). Parts of District Value.</p> <p>A stream shaded by a hedge and trees. Aquatic vegetation includes brooklime <i>Veronica beccabunga</i>, whilst the adjacent hedges and trees have hawthorn <i>Crataegus monogyna</i>, field maple <i>Acer campestre</i>, ash <i>Fraxinus excelsior</i>, blackthorn <i>Prunus spinosa</i>, crack willow <i>Salix fragilis</i> and bramble <i>Rubus fruticosus</i>.</p>
<p>Ecosite 109/15 Cadle Farm Pasture LWS</p>	<p>Designated a Local Wildlife Site (LWS). Site of District value.</p> <p>Small strip of land above the A46 road embankment dominated by tall grasses such as false oat-grass <i>Arrhenatherum elatius</i>. Spear thistle <i>Cirsium vulgare</i> and creeping thistle <i>Cirsium arvense</i> are frequent and ragwort <i>Senecio spp.</i> is also present. In 1992 species recorded included meadow vetchling <i>Lathyrus pratensis</i>, bird's-foot-trefoil <i>Lotus sp.</i>, self-heal <i>Prunella vulgaris</i> and lady's bedstraw <i>Galium verum</i>. Marbled white has also been recorded on site (unknown if breeding).</p>
<p>Ecosite 114/15 Shottery Brook Gardens</p>	<p>Nature conservation value ungraded.</p> <p>A public park, the site is popular with members of the public.</p>
<p>Ecosite 118/15 Park Farm Fields</p>	<p>Nature conservation status ungraded.</p> <p>The fields are considered to be species rich, with bee orchid <i>Ophrys apifera</i> and field woodrush <i>Luzula campestris</i> among the species noted.</p>

<p>Ecosite 137/15 Caravan Park Field</p>	<p>Identified as a potential Local Wildlife Site (pLWS).</p> <p>A small meadow next to a caravan park and nursery, containing false oat-grass <i>Arrhenatherum elatius</i>, yorkshire fog <i>Holcus lanatus</i> and cock's-foot <i>Dactylis glomerta</i>. There is abundant red clover <i>Trifolium pratense</i>, and frequent nettle-leaved bellflower <i>Campanula trachelium</i>, black knapweed <i>Centaurea nigra</i>, and yellow rattle <i>Rhinanthus minor</i>. Wild carrot <i>Daucus carota</i> and meadow vetchling <i>Lathyrus pratensis</i> are also present (2004).</p>
<p>Ecosite 146/15 Grassland by Billesley Wood and Drayton Brook</p>	<p>Nature conservation status ungraded.</p> <p>The site is poor semi-improved grassland with a strip down the centre which is kept quite short for a horse gallop. The strips of uncut grass on either edge show the greatest variety, with false oat-grass <i>Arrhenatherum elatius</i>, cock's-foot <i>Dactylis glomerata</i> and yorkshire fog <i>Holcus lanatus</i>. Also present are common sorrel <i>Rumex acetosa</i> and creeping buttercup <i>Ranunculus repens</i>.</p>
<p>Ecosite 147/15 Riparian Wood</p>	<p>Identified as a potential Local Wildlife Site (pLWS).</p> <p>The banks of the river here have an ash <i>Fraxinus excelsior</i> canopy, with field maple <i>Acer campestre</i> and hawthorn <i>Crataegus monogyna</i> in the understory. The ground flora also contains wood avens <i>Geum urbanum</i>, garlic mustard <i>Alliaia petiolata</i> and herb robert <i>Geranium robertianum</i>.</p>
<p>Ecosite 01/25 Welcombe Hills and Clopton House LNR</p>	<p>Parts of the site is identified as a potential Local Wildlife Site (pLWS). The majority of this site is a statutory Local Nature Reserve (LNR).</p> <p>Old parkland landscape with woodland, semi-improved grassland and areas of scrub. The site also includes a golf course.</p> <p>The semi-improved grassland is relatively species rich with some ridge and furrow. Plant species recorded include adder's-tongue fern <i>Ophioglossum vulgatum</i>, agrimony <i>Agrimonia eupatoria</i>, bee orchid <i>Ophrys apifera</i>, lady's bedstraw <i>Galium verum</i> and wild carrot <i>Daucus carota</i>.</p> <p>Ash <i>Fraxinus excelsior</i> and oak <i>Quercus robur</i> woodlands are present, with some horse chestnut <i>Aesculus hippocastanum</i>, beech <i>Fagus sylvatica</i>, common lime <i>Tilia x europaea</i> and hornbeam <i>Carpinus betulus</i>. Understorey species include hawthorn <i>Crataegus mongyna</i>, field maple <i>Acer campestre</i>, blackthorn <i>Prunus spinosa</i> and sycamore <i>Acer pseudoplatanus</i>. A good range of tree and shrub species are also found in hedgerows, as well as old parkland trees.</p> <p>The site is also of high value for local fauna.</p>

<p>Ecosite 02/25 Disused Railway line</p>	<p>Identified as a potential Local Wildlife Site (pLWS). The disused railway continues into Oxhouse Farm SSSI (not in this search area). A site of county nature conservation value.</p> <p>This is a large site covering the length of this linear feature in this 10km square. The description here relates to the section between SP 206 536 – SP 212 522.</p> <p>Only Tetrad B falls within the search area.</p> <p>Tetrad B Identified as a potential Local Wildlife Site (pLWS). A dismantled railway with frequent hawthorn <i>Crataegus monogyna</i> and elder <i>Sambucus nigra</i> scrub. Forbs include ribwort plantain <i>Plantago lanceolata</i>, creeping cinquefoil <i>Potentilla reptans</i>, selfheal <i>Prunella vulgaris</i> and occasional perforate st. john's wort <i>Hypericum perforatum</i>, red bartsia <i>Odontites vernus</i>, centaury <i>Centaureum erythaea</i> and weld <i>Reseda luteola</i>. On the cutting banks there is hawthorn, blackthorn <i>Prunus spinosa</i> and locally abundant ash <i>Fraxinus excelsior</i>.</p>
<p>Ecosite 21/25 River Avon LWS</p>	<p>Designated a Local Wildlife Site (LWS).</p> <p>This linear feature is of high nature conservation value and is important to a number of rare, notable and protected species in the county. Its function as a habitat corridor and linear feature is important. Even though it has been much modified, the habitats are diverse with a wide range of natural and semi-natural features. Along all its length the river has good stands of bankside vegetation with many instream and bank features, from mid-point and side bars to oxbows, riffles, backwaters, pools, eroding and stable earth cliffs.</p> <p>The river contains species of local, regional, national and international importance. The associated flood plain habitats include some of the counties rarest grassland types, both flood meadow and hay meadow. These grasslands are important not only in terms of their floral species assemblages but also for breeding and over wintering birds.</p> <p>The river is a known location for populations of white clawed crayfish <i>Austropotamobius pallipes</i> and otter <i>Lutra lutra</i>, whilst water vole <i>Arvicola amphibious</i> has also been recorded along the river.</p> <p>The river is also an important fishery and is an important river for eels <i>Anguilla anguilla</i>.</p>
<p>Ecosite 35/25 Snitterfield Reservoir</p>	<p>Nature conservation status ungraded.</p> <p>The reservoir has concrete banks with no emergent or submerged species. Marginal species include good king henry <i>Chenopodium bonus-henricus</i>, marsh thistle <i>Cirsium palustre</i> and spear thistle <i>Cirsium vulgare</i>. Used by the Stratford Angling Club.</p>

<p>Ecosite 68/25 Lower Ingon</p>	<p>Identified as a potential Local Wildlife Site (pLWS).</p> <p>An ash <i>Fraxinus excelsior</i> woodland with occasional oak <i>Quercus robur</i>, elder <i>Sambucus nigra</i> and hawthorn <i>Crataegus monogyna</i>. The ground flora in the more open areas includes rough meadow-grass <i>Poa trivialis</i> and cocksfoot <i>Dactylis glomerata</i>, whilst in the more enclosed parts of the wood red campion <i>Silene dioica</i>, wood avens <i>Geum urbanum</i>, early purple orchid <i>Orchis mascula</i> and bluebell <i>Hyacinthoides non-scripta</i> can be found. The site also contains a pond. Lesser-spotted woodpecker <i>Dendrocopos minor</i> and nightingale <i>Luscinia megarhynchos</i> have been recorded historically within the wood.</p>
<p>Ecosite 78/25 Stratford-upon-Avon Holy Trinity Churchyard</p>	<p>Nature conservation status ungraded.</p> <p>The churchyard supports a range of flora, including bluebell <i>Hyacinthoides non-scripta</i>, winter aconite <i>Eranthis hyemalis</i>, ivy-leaved toadflax <i>Cymbalaria muralis</i> and lesser celandine <i>Ranunculus ficaria</i>.</p>
<p>Ecosite 79/25 Stratford upon-Avon, St. Gregory's R.C. Churchyard</p>	<p>Nature conservation status ungraded.</p> <p>A Churchyard containing a number of mature yews <i>Taxus baccata</i> and a range of flora, including ivy-leaved speedwell <i>Veronica hederifolia</i>, lesser celandine <i>Ranunculus ficaria</i> and selfheal <i>Prunella vulgaris</i>.</p>
<p>Ecosite 83/25 Rush Brook and Tributary LWS</p>	<p>Designated as a Local Wildlife Site (LWS).</p> <p>A small shallow stream fed by springs. Young pollarded willows <i>Salix sp</i> are along the length, and some emergent and marginal vegetation is also present. The habitat is important for birds and insects in an otherwise arable area.</p>
<p>Ecosite 84/25 Ingon Manor Golf Course</p>	<p>Nature conservation status ungraded.</p> <p>The site includes streams and lakes which could support a range of flora and fauna.</p>

Non-statutory site designations

County important sites are known as 'Local Wildlife Sites' (previously Sites of Importance for Nature Conservation). There are also a number of sites of nature conservation importance, termed "Ecosites", which are found within your area of search. Information about the designation and grading of Ecosites is included in the table above.

The county is currently reviewing its site system and will be identifying further Local Wildlife Sites (LWS) over the next few years. Currently we have identified those sites which are potential Local Wildlife Sites (pLWS) and these are also indicated below with the Ecosite details; many sites are as yet ungraded against the LWS system. Please contact us if you would like a copy of the detailed citation for an LWS within your search area.

Some Ecosites are also Local Geological Sites (LGS) or statutory Local Nature Reserves (LNRs). Details of these designations are also given in the table with the Ecosite details.

The table above gives brief details of all known Ecosites within your area of search; please see the enclosed map for locations. Sites of regional and local biodiversity interest are considered to play a fundamental role in meeting overall national biodiversity targets, and therefore appropriate weight must be attached to designated Ecosites in all planning applications (in accordance with local plan policies and the general principles of the National Planning Policy Framework (NPPF)).

N.B. All watercourses are considered to be of ecological importance; however, accurate assessment of the relative importance of the various stretches is not yet generally possible.

Structure and Local Plan policies provide protection for these sites or, in circumstances where development is allowed, require mitigation measures to off-set any damage. In order to achieve this it is essential that adequate survey details for sites which may be affected by development are gathered at a very early stage. For sites of high biodiversity value this requires Phase 2 survey work and species specific surveys including invertebrates, mammals, birds and so on. Guidance is available from the Institute of Environmental Assessment (IEA) in "Guidelines for Baseline Ecological Assessment".

Please note that the brief descriptions above include species recorded within the whole Ecosite, and therefore potentially an area outside of your specific area of search. In particular descriptions of linear Ecosites such as water courses and railway lines may include species which were not necessarily recorded within your area of search.

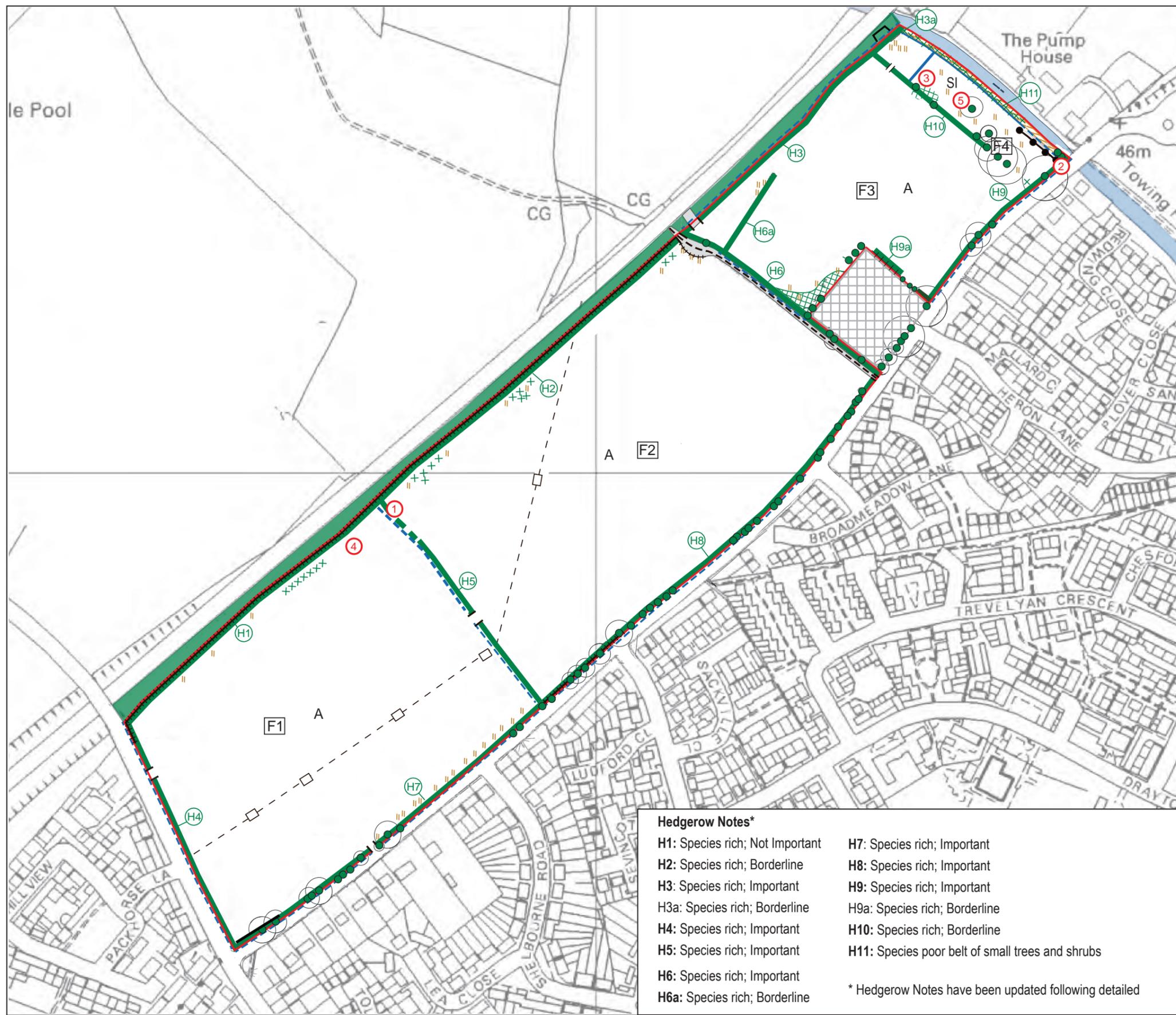
For further information relating to specific sites please contact WBRC at wbrc@warwickshire.gov.uk

*Working for
Warwickshire*

Appendix C

Habitats Plan
CSa/1957/100

DRAFT



Key

- Site Boundary
- SI Semi-improved Grassland
- A Arable Land
- Fn Field Number
- Hedgerow (Refer to hedgerow notes below for detail)
- Coniferous Hedgerow
- Hn Hedgerow Number
- Offsite Planted Woodland Belt
- Dense/ Continuous Scrub
- Scattered Scrub
- Continuous Tall Ruderal
- Scattered Tall Ruderal
- Individual Tree
- Dry Ditch
- Wet Ditch
- Canal
- Earth Bank
- Fence
- Pylon
- Public Right of Way
- Area Not Included in Surveyed Area
- Culvert
- Concrete Track



Hedgerow Notes*

- | | |
|--|---|
| H1: Species rich; Not Important | H7: Species rich; Important |
| H2: Species rich; Borderline | H8: Species rich; Important |
| H3: Species rich; Important | H9: Species rich; Important |
| H3a: Species rich; Borderline | H9a: Species rich; Borderline |
| H4: Species rich; Important | H10: Species rich; Borderline |
| H5: Species rich; Important | H11: Species poor belt of small trees and shrubs |
| H6: Species rich; Important | |
| H6a: Species rich; Borderline | |
- * Hedgerow Notes have been updated following detailed

Target Notes

- ① Debris pile
- ② Scrub/brush pile
- ③ Ridge and furrow
- ④ Mammal push through
- ⑤ Manure pile with tall ruderal

