

**M42 Junction 6 Improvement
Scheme Number TR010027
Volume 6
6.3 Environmental Statement
Appendix 9.3 Hedgerow Report**

Regulation 5(2)(a)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed
Forms and Procedure) Regulations 2009

January 2019

Infrastructure Planning

Planning Act 2008

**The Infrastructure Planning
(Applications: Prescribed Forms
and Procedure) Regulations 2009**

**M42 Junction 6 Improvement
Development Consent Order 201[-]**

**6.3 Environmental Statement
Appendix 9.3 Hedgerow Report**

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Appendix 9.3 - Hedgerow report

1 Introduction

1.1 Legislation & policy

- 1.1.1 Under the Hedgerows Regulations 1997 [REF 1] it is against the law, with certain exceptions, to remove or destroy ‘important’ hedgerows without permission from the local planning authority. ‘Important’ hedgerows are those that meet certain criteria, as set out in the regulations. In order to establish the importance of a hedgerow in line with the regulations, further survey work is required for any hedgerow that:

“has a continuous length of, or exceeding, 20m”; or

“has a continuous length of less than 20m and, at each end, meets (whether by intersection or junction) another hedgerow”; and

“has existed for 30 years or more”.

- 1.1.2 See Section 2.2 for further details of the criteria set out in the Regulations [REF 1] for defining ‘important’ hedgerows.
- 1.1.3 For permission to remove sections of hedgerow, a Hedgerow Removal Notice must be submitted in writing to the Local Planning Authority. The Local Planning Authority will then assess the importance of the hedgerow using criteria listed within Schedule 1 of the Regulations [REF 1]. This report should be included with the Hedgerow Removal Notice. Alternatively, hedgerow removal is deemed to be approved by the LPA when included as part of a planning permission.
- 1.1.4 Hedgerows comprising 80% or more of at least one native woody species qualify as Habitat of Principal Importance under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 [REF 2] and also as Priority Habitat of the Warwickshire, Coventry & Solihull Biodiversity Action Plan (BAP) [REF 3].
- 1.1.5 The most notable hedgerows in the county are those that meet the criteria for selection as Local Wildlife Sites (LWS) [REF 4]. In Warwickshire, Coventry & Solihull, LWSs are evaluated against a set of scientific and cultural characteristics that are based on an expanded version of the criteria developed for sites of national importance (i.e. Sites of Special Scientific Interest). No specific threshold is defined for LWS selection, with sites judged on a case-by-case basis and approved only by the LWS Panel.

1.2 Purpose of this document

- 1.2.1 The purpose of this appendix is to provide further detail to that contained in Chapter 9 Biodiversity of the Environmental Statement [TR010027/APP/6.1] on the hedgerows within the Order Limits to ascertain the following:
- whether the hedgerows within the Order Limits could be classified as important according to the wildlife and landscape criteria of the Hedgerow Regulations 1997 [REF 1];

- b. whether the hedgerows meet the criteria for selection as Habitat of Principal Importance under s41 of the NERC Act 2006 [REF 2];
- c. whether the hedgerows qualify as Priority Habitat of the Warwickshire, Coventry & Solihull BAP [REF 3]; and
- d. whether hedgerows would be likely to meet the selection criteria for Local Wildlife Sites in Warwickshire [REF 4].

1.3 Structure of this document

1.3.1 This Appendix is structured into the following sections:

- a. methodology – this section outlines the methods employed during desk study and field study stages of the assessment and also lists limitations to survey scope.
- b. results – this section contains the results of the field surveys.
- c. discussion – this section outlines the assessment of the results the study.

2 Methodology

2.1 Scope of surveys

- 2.1.1 All vegetated boundary features identified as potentially being affected by the Scheme (either directly impacted or occurring adjacent to proposed working areas or access routes), were subject to further survey effort. Field surveys were undertaken prior to the finalisation of the Order Limits, with a rolling review of survey scope against the developing scheme to ensure that all hedgerows that might be affected were surveyed.
- 2.1.2 A total of 93 vegetated boundary features were surveyed by experienced ecologists during suitable weather conditions on 29 May, 5 and 19 June 2018.

2.2 Hedgerow survey

- 2.2.1 In accordance with the Hedgerow Regulations 1997 [REF 1], a hedgerow is measured from the point or points where it meets another hedgerow or hedgerows, or where there is a gap of more than 20m between the end of the hedgerow and the nearest line of hedge. Gaps within a hedgerow are included in the total length as long as they are 20m or less in length.
- 2.2.2 The hedgerow assessment involved a detailed survey recording all plant species present in the hedgerow and within 1m of it. Native 'woody species' and 'ground flora' species that are relevant to the criteria of the Hedgerow Regulations are provided in Annex A.
- 2.2.3 The average number of woody species present per central 30m stretch of each hedgerow was also recorded in the following manner:
 - a. where the length of hedgerow did not exceed 30m, the total number of woody species present in the hedgerow was recorded;

- b. where hedges were between 30m and 100m, the number of woody species present in the central 30m stretch was recorded;
- c. where its length was greater than 100m but less than 200m the hedge was divided into equal halves and a 30m transect surveyed in each half; or.
- d. Where hedges were greater than 200m the length was divided by three and the number of woody species present in the central 30m section within each third of the hedge was recorded.

2.2.4 Hedgerows with an average of five or more woody species per central 30m section were classified as species-rich.

2.2.5 Hedgerows that were considered to be more than 30 years old and at least 20m long were then assessed to identify whether they can be classified as ecologically 'important' as indicated by the ecological criteria provided by the Hedgerow Regulations 1997 [REF 1].

2.2.6 These criteria include whether:

- a. the hedgerow contains or has records of previously containing, species listed on Schedules 1, 5 or 8 of the Wildlife and Countryside Act 1981 [REF 5]; or various other defined species including certain Red Data Book [REF 6] species. Historical records apply for up to five years for fauna, and ten years for flora.
- b. the hedgerow is adjacent to a public right of way (not counting an adopted highway) and includes at least four woody species as defined in Schedule 3 of the regulations plus at least two Associated Features.
- c. the hedgerow includes one or more of the following:
 - i. at least seven woody species;
 - ii. six woody species and meets at least three of the seven associated feature criteria;
 - iii. at least six woody species and any part of the hedgerow contains at least one of the following black poplar tree, large-leaved, small-leaved lime or wild service tree; or
 - iv. at least five woody species and meets at least four of the seven associated feature criteria.

2.2.7 The associated features of hedgerows are defined as follows:

- a. a bank or wall which supports the hedgerow along at least one half of its length;
- b. gaps not exceeding 10% of the hedgerow length;
- c. on average, at least one standard tree per 50m. Standard trees must be >20cm diameter at chest height if single-stemmed or must have at least 2 stems of >15cm diameter at chest height if multi-stemmed;
- d. at least three ground flora woodland species (see below) within 1m radius of the hedgerow;

- e. a ditch for at least half the length;
- f. connections scoring four or more points, where a connection with another hedgerow scores one point and a connection with a pond or woodland (in which the majority of trees are broad-leaved) scores two points. A hedgerow is connected with something not only if it meets it but also if it has a point within 10m of it and would meet it if the line of the hedgerow continued; and
- g. a parallel hedge within 15m.

2.2.8 Also recorded during the field survey were details not required by the regulations such as hedgerow height, width, integrity, structure and management history.

2.2.9 Hedgerows consisting of 80% or more native woody species qualify as Habitat of Principal Importance under Section 41 of the NERC Act 2006 [REF 2] and Priority Habitat of the Warwickshire, Coventry & Solihull BAP [REF 3].

2.3 Survey limitations

- 2.3.1 Access was not permitted into large areas of privately owned land within the Order Limits due to landowner refusing permission or not being contactable. Where possible these areas were observed from adjacent accessible land parcels or public rights of way.
- 2.3.2 The following hedgerows were not accessible on the date(s) of survey: H27, H36, H41, H47, H48, H49, H51, H52, H53, H57, H59, H60, H61, H62, H71, H73, H76, H77, H78, H80, H84, H85, H90, H93, H96, H101, H108, H109, H122, H123, H124, H125, H129, H130, H131, H132, H133, H134, H136 and H137.
- 2.3.3 Information relating to the archaeological and historical significance of hedgerows within the Scheme does not form part of this assessment.

3 Results

3.1 Field surveys

- 3.1.1 The results of the surveys are summarised below, with hedgerow locations and references provided in **Figure 9.3** and full details of the survey results presented in Annex B.
- 3.1.2 A number of habitats are present within and around the Order Limits, and are largely dominated by arable and pasture farmland, with hedgerows and blocks of both mixed woodland and mature broadleaved woodland, some of which are considered to be ancient woodland. There are also watercourses (brooks and wet ditches), waterbodies (ponds), areas of unimproved, semi-improved neutral grassland and amenity grassland, urban areas and roads. A full description of the habitats is provided in Appendix 9.2 [TR010027/APP/6.3].
- 3.1.3 Of the 93 vegetated boundary features assessed, 75 were classified as hedgerows and 18 were not considered to be hedgerows because:
 - a. eleven formed part of a woodland/dense scrub edge and as a result were greater than 5m wide;

- b. four were defined as tree lines;
- c. two were entirely defunct and replaced with fence lines and scattered hawthorn; and
- d. one was a ditch.

- 3.1.4 The most common species occurring in hedgerows surveyed were hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*), elder (*Sambucus nigra*) and field maple (*Acer campestre*), with ash (*Fraxinus excelsior*) and oak (*Quercus* sp.) standards. One notable woody species was recorded; wild service tree (*Sorbus torminalis*), which was present in H55. Ancient woodland ground flora species commonly recorded included bluebell (*Hyacinthoides non-scripta*), wood avens (*Geum urbanum*), goldilocks buttercup (*Ranunculus auricomus*), enchanter's-nightshade (hybrid) (*Circaea x intermedia*) and herb-Robert (*Geranium robertianum*).
- 3.1.5 Of the 93 hedgerows assessed all were dominated by at least one native species (i.e. comprising of at least 80% native species), thus qualifying as Priority habitat under Section 41 of the NERC Act 2006 [REF 2].
- 3.1.6 A total of 32 hedgerows were considered to be species-rich, i.e. an average central 30m section comprising of five or more native woody species. Of these species-rich hedgerows H20, H24, H25, H98B & H105 each had an average of eight or more woody species per central section.
- 3.1.7 A total of 30 qualified as 'important', with 63 not meeting the criteria set out by the Hedgerow Regulations.
- 3.1.8 The Important hedgerows were distributed evenly over the area between the A45 and Solihull Road. **Table 1** provides a summary of the hedgerows qualifying and under what criteria. Several of the hedgerows qualify under more than one criteria but are only listed once.

Table 1: Important hedgerows and qualifying criteria

Criteria for qualifying	Hedgerow numbers
Seven or more species/typical 30m length	H16, H20, H24, H25, H26, H34, H38, H40, H43, H45, H98B & H105
Six species/typical 30m length and at least 3 qualifying features	H19, H23, H35, H39, H107 & H119
Six species/typical 30m length and wild service tree	H55
Five species/typical 30m length and at least 4 qualifying features	H42 & H106
Four species/typical 30m length; along a public highway/byway/footpath and at least 2 qualifying features	H12, H28, H29, H44, H67, H73, H94, H96 & H135

4 Summary

- 4.1.1 Overall the hedgerows occurred more frequently in the central and south-west areas of the Scheme as shown in **Figure 9.3**. All of the hedgerows present are considered to represent Habitat of Principal Importance under s41 of the NERC Act 2006 [REF 2] and Priority Habitat of the Warwickshire, Coventry & Solihull BAP [REF 3].
- 4.1.2 Of the boundary features which were classed as hedgerows and assessed under the Hedgerow Regulations, 30 qualified as 'important' under the wildlife and landscape criteria of the Hedgerow Regulations 1997 [REF 1]. This figure does not take into account archaeological or historical features.
- 4.1.3 The Important hedgerows had an even distribution across the Scheme. However, Hedgerows H20, H24, H25, H26, H34, H38, H40, H43 & H45, which were species-rich and 'Important', formed a network located in the area between Shadowbrook Lane and Solihull Road. The hedge H16 to the east of M42 and hedges H98B and H105 to the south of the A45 were also species-rich and 'Important'. Although some of these Important and species-rich hedges show signs of intensive management, they are inter-connected and form connections with some areas of semi-natural habitat, including woodland. On this basis it is considered reasonable to anticipate that the hedgerows would meet the criteria for selection as LWSs. Therefore, these Important and species-rich hedgerows are considered to be of County importance.
- 4.1.4 Several hedgerows were not subject to the field survey due to access constraints (Section 2.3) and as a precaution these hedgerows have also been considered to be of up to County importance.
- 4.1.5 The extent of hedgerow lost to the Scheme is approximately 4.5km. Retained hedgerows, and associated mature trees, will be protected by the Scheme in accordance with BS 5837:2012 [REF 7], which shall include erecting temporary fencing around a standard root protection zone and maintaining throughout the period of Scheme construction.
- 4.1.6 Any hedgerow loss (including the loss of hedgerows that have been inaccessible to survey) will be mitigated through the replanting of native, species-rich hedgerows (see Chapter 9 Biodiversity of the Environmental Statement [TR 010027/APP/6.1]). Planting will be derived from a source of local provenance and designed to maximise the overall hedgerow structure, for example by planting hedgerows alongside ditches or incorporating hedge banks. Hedgerows would be managed over the long-term to diversify the structure and promote an A-shaped structure that will benefit a range of flora and fauna.

5 References

Reference number	Source
REF 1	The Hedgerow Regulations 1997. http://www.legislation.gov.uk/ukxi/1997/1160/contents/made
REF 2	The Natural Environment & Rural Communities Act 2006. https://www.legislation.gov.uk/ukpga/2006/16/contents
REF 3	Warwickshire, Coventry & Solihull Biodiversity Action Plan. http://www.warwickshirewildlifetrust.org.uk/LBAP
REF 4	Warwickshire Wildlife Trust <i>Guidance Note on Application of Site Selection Criteria: 'The Green Book' – Guidance on the Selection of Local Wildlife Sites in Warwickshire, Coventry and Solihull (ver 12/13)</i> . Local Wildlife Sites Project. https://apps.warwickshire.gov.uk/api/documents/WCCC-863-559
REF 5	The Wildlife & Countryside Act 1981. HMSO (1981). https://www.legislation.gov.uk/ukpga/1981/69
REF 6	Publications and Resources. International Union for the Conservation of Nature (2018). https://www.iucnredlist.org/resources/grid
REF 7	BS 5837:2012 Trees in relation to design, demolition and construction. Recommendations. British Standards Institute (2012). http://www.crawley.gov.uk/pub_livx/groups/operational/documents/plappcomment/ehfp2040459_attachment_1.pdf

Annex A: Woody and ground flora species defined by the Hedgerow Regulations 1997

Table B-5-1: Woody Species listed on Schedule 3

<i>Acer campestre</i> (field maple)
<i>Alnus glutinosa</i> (alder)
<i>Betula pendula</i> (silver birch)
<i>Betula pubescens</i> (downy birch)
<i>Buxus sempervirens</i> (box)
<i>Carpinus betulus</i> (hornbeam)
<i>Cornus sanguinea</i> ssp. <i>Sanguinea</i> (dogwood)
<i>Corylus avellana</i> (hazel)
<i>Crataegus laevigata</i> (midland hawthorn)
<i>Crataegus monogyna</i> (common hawthorn)
<i>Crataegus x media</i>
<i>Cytisus scoparius</i> (broom)
<i>Daphne laureola</i> (spurge-laurel)
<i>Daphne mezereum</i> (mezureon)
<i>Euonymus europaeus</i> (spindle)
<i>Fagus sylvatica</i> (beech)
<i>Frangula alnus</i> (alder buckthorn)
<i>Fraxinus excelsior</i> (ash)
<i>Hippophae rhamnoides</i> (sea buckthorn)
<i>Ilex aquifolium</i> (holly)
<i>Juglans regia</i> (walnut)
<i>Juniperus communis</i> (juniper)
<i>Ligustrum vulgare</i> (wild privet)
<i>Malus sylvestris</i> (crab apple)
<i>Populus alba</i> (white poplar)
<i>Populus nigra</i> ssp. <i>betulifolia</i> (black poplar)
<i>Populus tremula</i> (aspen)
<i>Populus x canescens</i> (grey poplar)

<i>Prunus avium</i> (wild cherry)
<i>Prunus spinosa</i> (blackthorn)
<i>Pyrus cordata</i> (Plymouth pear)
<i>Pyrus pyraister</i> (wild pear)
<i>Quercus petraea</i> (sessile oak)
<i>Quercus robur</i> (pedunculate oak)
<i>Quercus x rosacea</i>
<i>Rhamnus cathartica</i> (buckthorn)
<i>Ribes alpinum</i> (alpine currant)
<i>Ribes spicatum</i> (downy currant)
<i>Ribes uva-crispa</i> (gooseberry)
<i>Rosa</i> spp. (roses)
<i>Ruscus aculeatus</i> (butcher's broom)
<i>Salix</i> spp. (willows)
<i>Salix viminalis</i> (osier)
<i>Sambucus nigra</i> (elder)
<i>Sorbus aucuparia</i> (rowan)
<i>Sorbus torminalis</i> (wild service-tree)
<i>Sorbus</i> spp. (whitebeams)
<i>Taxus baccata</i> (yew)
<i>Tilia cordata</i> (small-leaved lime)
<i>Tilia platyphyllos</i> (large-leaved lime)
<i>Tilia x europaeus</i> (common lime)
<i>Ulex europaeus</i> (gorse)
<i>Ulex gallii</i> (western gorse)
<i>Ulex minor</i> (dwarf gorse)
<i>Ulmus</i> spp. (elms)
<i>Viburnum lantana</i> (wayfaring tree)
<i>Viburnum opulus</i> (guelder-rose)

Table B-5-2: Woodland ground flora species listed on Schedule 2

<i>Adoxa moschatellina</i> (moschatel)
<i>Ajuga reptans</i> (bugle)
<i>Allium ursinum</i> (ramsons)
<i>Anemone nemorosa</i> (wood anemone)
<i>Arum maculatum</i> (lord's-and-ladies)
<i>Athyrium filix-femina</i> (lady-fern)
<i>Blechnum spicant</i> (hard-fern)
<i>Brachypodium sylvaticum</i> (wood false-brome)
<i>Bromopsis ramosa</i> (hairy brome)
<i>Campanula latifolia</i> (giant bellflower)
<i>Campanula trachelium</i> (nettle-leaved bellflower)
<i>Carex sylvatica</i> (wood sedge)
<i>Circaea lutetiana</i> (enchanter's-nightshade)
<i>Conopodium majus</i> (pignut)
<i>Dryopteris affinis</i> agg. (scaly male-fern)
<i>Dryopteris carthusiana</i> (narrow buckler-fern)
<i>Dryopteris dilatata</i> (broad buckler-fern)
<i>Dryopteris filix-mas</i> (male-fern)
<i>Epipactis helleborine</i> (broad-leaved helleborine)
<i>Equisetum sylvaticum</i> (wood horsetail)
<i>Euphorbia amygdaloides</i> (wood spurge)
<i>Schedonorus gigantea</i> (giant fescue)
<i>Fragaria vesca</i> (wild strawberry)
<i>Galium odoratum</i> (woodruff)
<i>Galium saxatile</i> (heath bedstraw)
<i>Geranium robertianum</i> (herb-Robert)
<i>Geum urbanum</i> (wood avens)
<i>Hyacinthoides non-scriptus</i> (bluebell)
<i>Lamium galeobdolon</i> spp. <i>galeobdolon</i> or <i>montanum</i> (yellow archangel)
<i>Lathraea squamaria</i> (toothwort)

<i>Luzula pilosa</i> (hairy wood-rush)
<i>Luzula sylvatica</i> (greater wood-rush)
<i>Lysimachia nemorum</i> (yellow pimpernel)
<i>Melampyrum pratense</i> (common cow-wheat)
<i>Melampyrum sylvaticum</i> (small cow-wheat)
<i>Melica uniflora</i> (wood melick)
<i>Mercurialis perennis</i> (dog's mercury)
<i>Milium effusum</i> (wood millet)
<i>Orchis mascula</i> (early purple-orchid)
<i>Oxalis acetosella</i> (wood-sorrel)
<i>Paris quadrifolia</i> (herb-Paris)
<i>Asplenium scolopendrium</i> (hart's-tongue)
<i>Poa nemoralis</i> (wood meadow-grass)
<i>Polypodium vulgare</i> (common polypody)
<i>Polystichum aculeatum</i> (hard shield-fern)
<i>Polystichum setiferum</i> (soft shield-fern)
<i>Potentilla erecta</i> (tormentil)
<i>Potentilla sterilis</i> (barren strawberry)
<i>Primula elatior</i> (oxlip)
<i>Primula vulgaris</i> (primrose)
<i>Sanicula europaea</i> (sanicle)
<i>Teucrium scorodonia</i> (wood sage)
<i>Veronica montana</i> (wood speedwell)
<i>Viola odorata</i> (sweet violet)
<i>Viola reichenbachiana</i> (early dog-violet)
<i>Viola riviniana</i> (common dog-violet)

Annex B: Hedgerow survey results

Table B-5-3: Important hedgerow survey summary

Ref	Length (m)	Height /width (m)	Woody species along whole length	Average number of woody species/ 30m section	Byway	Associated Features	Connections (pond or woodland scores 2)	Important	Justification
H4	175	3 / 2	field maple, hazel, common hawthorn, ash, blackthorn, elder	4	No	Gaps <10%	Hedge x 3	No	
H5	118		ash, elder, common hawthorn	3	No			No	Species poor hedge hawthorn dominant, approximately 8m long, no connections
H6	182		common hawthorn, elder, dog-rose	3	No			No	Species-poor native hedge dominated by hawthorn

Ref	Length (m)	Height /width (m)	Woody species along whole length	Average number of woody species/ 30m section	Byway	Associated Features	Connections (pond or woodland scores 2)	Important	Justification
H8	367		ash, common hawthorn, pedunculate oak	3	No			No	Species poor hedge, dominated entirely by ash and hawthorn
H9	56	2 / 1.5	common hawthorn, blackthorn, dog-rose, elder, Standard Tree: pedunculate oak	5	No	Gaps <10% Ditch >1/2 length 3 standard trees	Hedge x 3	No	
H10	240	3 / 2	field maple, common hawthorn, blackthorn, dog-rose, elder	4	Yes	Gaps <10% Parallel hedge within 15m	Hedge x 2 Woodland x 1	No	
H11	250	5 / 3	field maple, hazel, common hawthorn, bird cherry, Standard Tree: ash, wild cherry, pedunculate oak	4	Yes	Gaps <10% Parallel hedge within 15m >20 standard trees	Hedge x 2 Woodland x 1	No	

Ref	Length (m)	Height /width (m)	Woody species along whole length	Average number of woody species/ 30m section	Byway	Associated Features	Connections (pond or woodland scores 2)	Important	Justification
H12	141	6 / 2	hazel, common hawthorn, ash, holly, crab apple, grey poplar, blackthorn, elder, Standard Tree: field maple, ash	5	Yes	Gaps <10% Parallel hedge within 15m 5 standard trees	Hedge x 3	Yes	Adjacent to a public right of way and includes at least four woody species plus at least two Associated Features
H13	80	4 / 2	common hawthorn, blackthorn, dog-rose, Standard Tree: field maple, ash	4	No	3 standard trees	Hedge x 2	No	
H14	81	6-7 / 2	Standard Tree: field maple, ash	3	No	Ditch >1/2 length; 2 standard trees	Hedge x 3	No	
H15	95	6 / 2	common hawthorn, blackthorn, dog-rose, elder, Standard Tree: ash, pedunculate oak	6	No	Ditch >1/2 length 2 standard trees	Hedge x 2	No	

Ref	Length (m)	Height /width (m)	Woody species along whole length	Average number of woody species/ 30m section	Byway	Associated Features	Connections (pond or woodland scores 2)	Important	Justification
H16	268	8 / 4	common hawthorn, ash, crab apple, blackthorn, dog-rose, Standard Tree: alder, pedunculate oak, willows	7	No	Ditch >1/2 length >6 standard trees	Hedge x 3	Yes	Includes at least seven woody species
H17	396	2 / 1.5	field maple, hazel, common hawthorn, blackthorn, dog-rose, Standard Tree: pedunculate oak	4	No	Gaps <10% 8 standard trees	Hedge x 4	No	
H19	189	12 / 1-2	field maple, hazel, common hawthorn, blackthorn, dog-rose, Standard Tree: crab apple, pedunculate oak	6	No	Gaps <10% Ditch >1/2 length 3 standard trees	Hedge x 2 Woodland x 1	Yes	Includes six woody species and meets at least three Associated Feature criteria

Ref	Length (m)	Height /width (m)	Woody species along whole length	Average number of woody species/ 30m section	Byway	Associated Features	Connections (pond or woodland scores 2)	Important	Justification
H20	170	2-3 / 1-2	field maple, hazel, common hawthorn, blackthorn, dog-rose, elder, Standard Tree: ash, black poplar (hybrid), pedunculate oak	8	No	Gaps <10% Ditch >1/2 length 4 standard trees	Hedge x 3	Yes	Includes at least seven woody species
H21	32			0	No			No	Species-poor hedge dominated by single species
H22	257	1-2 / 1	field maple, hazel, common hawthorn, beech, dog-rose, elder, Standard Tree: ash	4	No	Gaps <10% 1 standard tree	Hedge x 3	No	

Ref	Length (m)	Height /width (m)	Woody species along whole length	Average number of woody species/ 30m section	Byway	Associated Features	Connections (pond or woodland scores 2)	Important	Justification
H23	80	2-3 / 2	field maple, common hawthorn, blackthorn, dog-rose, elder, Standard Tree: ash	6	No	Gaps <10% 3 standard trees	Hedge x 2 Woodland x 1	Yes	Includes six woody species and meets at least three Associated Feature criteria
H24	59	1-2 // 1	field maple, dogwood, hazel, common hawthorn, blackthorn, dog-rose, elder, Standard Tree: pedunculate oak	8	Yes (into private access track)	1 standard tree	Hedge x 2	Yes	Includes at least seven woody species
H25	189	2-3 / 1-2	field maple, dogwood, hazel, common hawthorn, ash, holly, black poplar (hybrid), blackthorn, pedunculate oak, dog-rose, elder	8	Yes	Gaps <10% Ditch >1/2 length >10 standard trees	Hedge x 6	Yes	Includes at least seven woody species

Ref	Length (m)	Height /width (m)	Woody species along whole length	Average number of woody species/ 30m section	Byway	Associated Features	Connections (pond or woodland scores 2)	Important	Justification
H26	69	1-2 / 1	field maple, dogwood, hazel, common hawthorn, blackthorn, Standard Tree: ash, pedunculate oak	7	No (private access track)	Gaps <10% Ditch >1/2 length Parallel hedge within 15m 2 standard trees	Hedge x 2 Woodland x 1	Yes	Includes at least seven woody species
H28	252		field maple, alder, hazel, common hawthorn, ash, blackthorn, dog-rose, willows, Standard Tree: pedunculate oak	5	Yes	Gaps <10% 6 standard trees	Hedge x 3	Yes	Adjacent to a public right of way and includes at least four woody species plus at least two Associated Features

Ref	Length (m)	Height /width (m)	Woody species along whole length	Average number of woody species/ 30m section	Byway	Associated Features	Connections (pond or woodland scores 2)	Important	Justification
H29	62	2 / 2	field maple, common hawthorn, holly, blackthorn, elder	5	Yes	Gaps <10% Parallel hedge within 15m	Hedge x 2	Yes	Adjacent to a public right of way and includes at least four woody species plus at least two Associated Features
H30	109		hawthorn, dog-rose, field maple	5	No			No	
H32	376	2 / 1.5	hazel, common hawthorn, blackthorn, dog-rose, elder, Standard Tree: pedunculate oak	4	No	4 standard trees	Hedge x 3	No	
H33	100	2 / 1.5	common hawthorn, elder	2	No	Gaps <10%	Hedge x 4	No	

Ref	Length (m)	Height /width (m)	Woody species along whole length	Average number of woody species/ 30m section	Byway	Associated Features	Connections (pond or woodland scores 2)	Important	Justification
H34	163	2 / 2	field maple, dogwood, hazel, common hawthorn, ash, blackthorn, pedunculate oak, dog-rose, elder, Standard Tree: willows	7	No	Gaps <10% Ditch >1/2 length 4 standard trees	Hedge x 4	Yes	Includes at least seven woody species
H35	173	2-3 / 1-2	hazel, common hawthorn, ash, pedunculate oak, blackthorn, dog-rose, elder	6	No	Gaps <10% Ditch >1/2 length 2 standard trees	Hedge x 3	Yes	Includes six woody species and meets at least three Associated Feature criteria
H37	193		dogwood, common hawthorn, dog-rose, elder, Standard Tree: pedunculate oak	3	No	Gaps <10% 3 standard trees	Hedge x 4	No - check if >30 years old	

Ref	Length (m)	Height /width (m)	Woody species along whole length	Average number of woody species/ 30m section	Byway	Associated Features	Connections (pond or woodland scores 2)	Important	Justification
H38	216	2-3 / 1-2	hazel, common hawthorn, holly, blackthorn, dog-rose, elder, gorse, Standard Tree: ash, pedunculate oak	7	Yes	Gaps <10% 5 standard trees	Hedge x 5 Woodland x 1	Yes	Includes at least seven woody species
H39	133	1-2 / 1	hazel, common hawthorn, ash, holly, blackthorn, dog-rose, Standard Tree: pedunculate oak	6	Yes	Gaps <10% Ditch >1/2 length 2 standard trees	Hedge x 4	Yes	Includes six woody species and meets at least three Associated Feature criteria
H40	216	3-4 / 2-3	hazel, common hawthorn, holly, blackthorn, dog-rose, elder, rowan, Standard Tree: ash, pedunculate oak, willows	7	No	Gaps <10% Ditch >1/2 length 4 standard trees	Hedge x 4	Yes	Includes at least seven woody species

Ref	Length (m)	Height /width (m)	Woody species along whole length	Average number of woody species/ 30m section	Byway	Associated Features	Connections (pond or woodland scores 2)	Important	Justification
H42	200	4 / 4	hazel, holly, blackthorn, dog-rose, elder, Standard Tree: alder	5	No	Gaps <10% Ditch >1/2 length 7 standard trees	Hedge x 2 Woodland x 1	Yes	Includes five woody species and meets at least four Associated Feature criteria
H43	404	1-2 / 1	field maple, hazel, common hawthorn, beech, holly, blackthorn, dog-rose, elder, Standard Tree: ash, pedunculate oak	7	No	Gaps <10% 4 standard trees	Hedge x 4	Yes	Includes at least seven woody species
H44	170	3-4 / 2-3	common hawthorn, blackthorn, dog-rose, willows, Standard Tree: pedunculate oak	4	Yes	Gaps <10% Ditch >1/2 length Parallel hedge within 15m > 10 standard trees	Hedge x 4	Yes	Adjacent to a public right of way and includes at least four woody species plus at least two Associated Features

Ref	Length (m)	Height /width (m)	Woody species along whole length	Average number of woody species/ 30m section	Byway	Associated Features	Connections (pond or woodland scores 2)	Important	Justification
H45	170	8 / 4	field maple, alder, common hawthorn, ash, holly, crab apple, blackthorn, dog rose, Standard Tree: ash, pedunculate oak	7	Yes	Gaps <10% Parallel hedge within 15m > 10 standard trees	Hedge x 2	Yes	Includes at least seven woody species
H50	22	8 / 4-5	common hawthorn holly, dog-rose	6	No	Gaps <10% Parallel hedge within 15m 3 standard trees	Hedge x 2	No - check if >30 years old	
H54	17			0				No	Species-poor hedge on the boundary of residential property

Ref	Length (m)	Height /width (m)	Woody species along whole length	Average number of woody species/ 30m section	Byway	Associated Features	Connections (pond or woodland scores 2)	Important	Justification
H55	329	12 / 2	field maple, silver birch, hazel, common hawthorn, holly, blackthorn, elder, wild service tree. Standard trees: sessile oak, pedunculate oak.	6	No	30-40 standard trees	Hedge x 3	Yes	Includes six woody species and contains wild service tree
H56	17	12 / 4	common hawthorn, Standard trees: alder, silver birch.	3	No	Gaps <10% Ditch >1/2 length 5 standard trees	Hedge x 3 Woodland x 1	No	Very small species poor hedge connecting several hedges and some woodland
H63	19			0	No			No	Species poor native hedge

Ref	Length (m)	Height /width (m)	Woody species along whole length	Average number of woody species/ 30m section	Byway	Associated Features	Connections (pond or woodland scores 2)	Important	Justification
H65	52			0	No			No	Species poor native hedge
H66	114			0				No	Species poor native hedge
H67	113	6 / 2-3	hazel, wild cherry, blackthorn, Standard Tree: field maple, hazel, pedunculate oak	4	Yes	Gaps <10% Parallel hedge within 15m 6-7 standard trees	Hedge x 3	Yes	Adjacent to a public right of way and includes at least four woody species plus at least two Associated Features
H73	120	6 / 3	blackthorn, dog-rose, hazel, common hawthorn, Standard Tree: field maple, wild cherry	5	Yes	Gaps <10% Parallel hedge within 15m 8 standard trees	Hedge x 4	Yes	Adjacent to a public right of way and includes at least four woody species plus at least two Associated Features

Ref	Length (m)	Height /width (m)	Woody species along whole length	Average number of woody species/ 30m section	Byway	Associated Features	Connections (pond or woodland scores 2)	Important	Justification
H74	175			0	No			No	Species-poor native hedge dominated by hawthorn
H79	171	3-5 / 2	hawthorn, ash, dog-rose, elder	4	No	Gaps <10%	Hedge x 2	No	
H81	50	3 / 2-3	field maple, common hawthorn, dog-rose	3	No	Gaps <10%	Hedge x 2 Woodland x 1	No	
H82	35			0	No			No	Species poor native hedge

Ref	Length (m)	Height /width (m)	Woody species along whole length	Average number of woody species/ 30m section	Byway	Associated Features	Connections (pond or woodland scores 2)	Important	Justification
H83	27			0	No			No	Species poor native hedge
H88	128	2 / 2	field maple, hazel, common hawthorn, holly, pedunculate oak, willows	5	Yes	Parallel hedge within 15m	Hedge x 2	No	
H94	369	3-4 / 3-4	field maple, hazel, common hawthorn, ash, blackthorn, dog-rose, willows, elder	6	Yes	Gaps <10% >10 standard trees	Woodland x 2	Yes	Adjacent to a public right of way and includes at least four woody species plus at least two Associated Features

Ref	Length (m)	Height /width (m)	Woody species along whole length	Average number of woody species/ 30m section	Byway	Associated Features	Connections (pond or woodland scores 2)	Important	Justification
H96	148	4-5 / 3	hazel, ash, blackthorn, elder, Standard Tree: field maple, common hawthorn, wild cherry	5	Yes	Gaps <10% Parallel hedge within 15m 10 standard trees	Hedge x 3	Yes	Adjacent to a public right of way and includes at least four woody species plus at least two Associated Features
H98 A	500	2 / 1.5	hawthorn, ash, elms. Standard tree: pedunculate oak	4	No	Gaps <10% >1 standard tree per 50m		No	
H98 B	501	2 / 2	field maple, hazel, common hawthorn, alder buckthorn, wild privet, guelder-rose, Standard tree: ash, whitebeams, common lime	9	No	Gaps <10%	Woodland x 1	Yes	Includes at least seven woody species

Ref	Length (m)	Height /width (m)	Woody species along whole length	Average number of woody species/ 30m section	Byway	Associated Features	Connections (pond or woodland scores 2)	Important	Justification
H99	21			0				No	species poor hedge containing field maple, hawthorn and sycamore
H102	0			0				No	Species-poor hedge adjoining residential property
H104	77	6 / 3		0	No	Gaps <10% Ditch >1/2 length 2 standard trees	Hedge x 1	No	
H105	206	6 / 3	hazel, common hawthorn, ash, holly, elder, lime. Standard tree: field maple, alder buckthorn, willows	9	No	Gaps <10% Ditch >1/2 length >1 standard tree per 50m	Hedge x 2	Yes	Hedge is greater than 30 years old

Ref	Length (m)	Height /width (m)	Woody species along whole length	Average number of woody species/ 30m section	Byway	Associated Features	Connections (pond or woodland scores 2)	Important	Justification
H106	50 and 42	6 and 10 / 1	field maple, common hawthorn, blackthorn. Standard tree: ash, pedunculate oak	5	No	Gaps <10% Ditch >1/2 length >1 standard tree per 50m	Hedge x 3	Yes	Hedge is greater than 30 years old
H107	145	7 / 3	field maple, hazel, common hawthorn, blackthorn, dog-rose, Standard tree: ash	6	No	Gaps <10% Ditch >1/2 length >1 standard tree per 50m	Hedge x 2	Yes	Includes six woody species and meets at least three Associated Feature criteria
H110 / H111	198	6 / 2	ash, common hawthorn, elder	3		3 standard trees	Woodland x 1	No	
H112	55	5 / 2		0	No	Gaps <10% Ditch >1/2 length Parallel hedge within 15m	Hedge x 1	No	

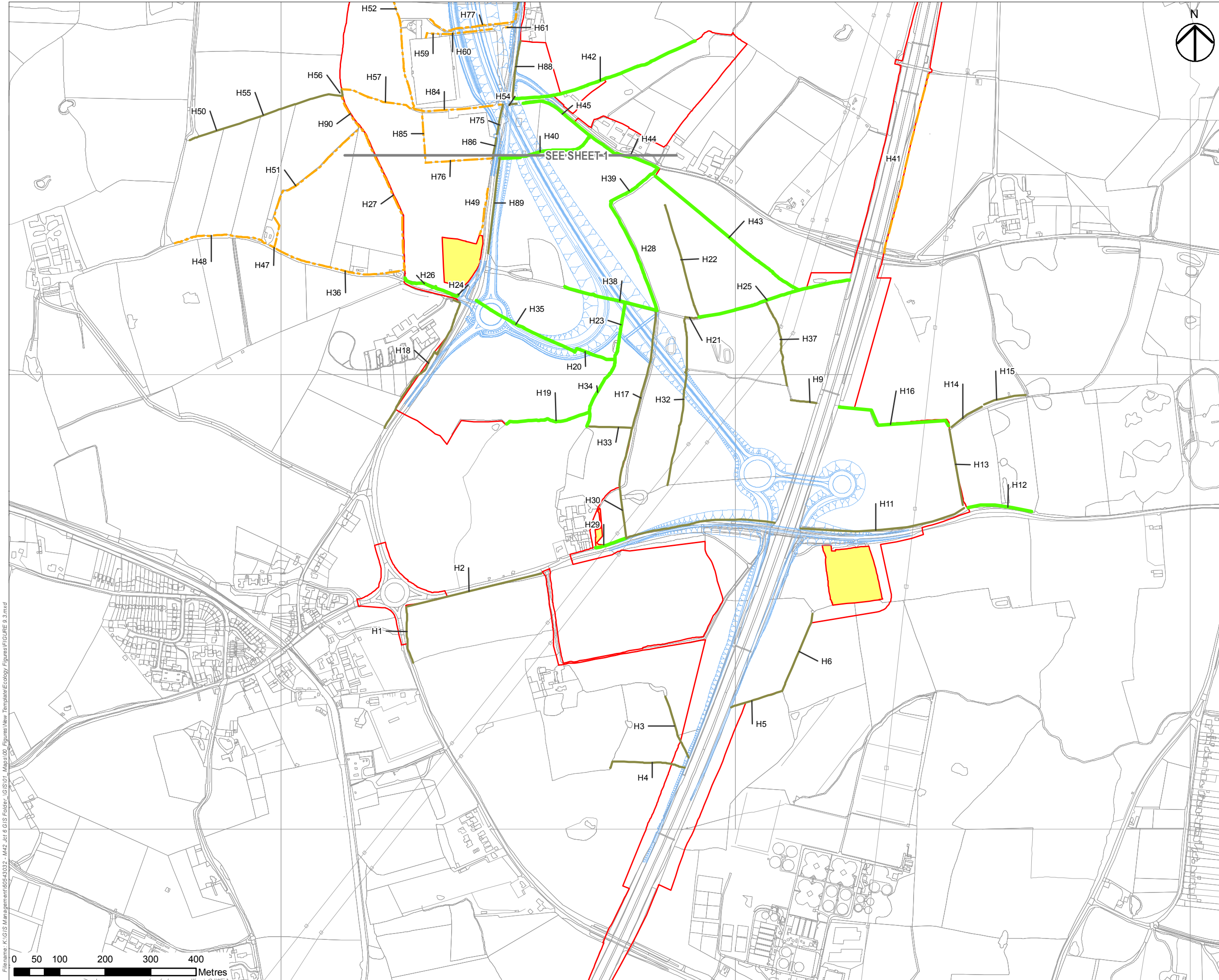
Ref	Length (m)	Height /width (m)	Woody species along whole length	Average number of woody species/ 30m section	Byway	Associated Features	Connections (pond or woodland scores 2)	Important	Justification
H114	90	1.5 / 1.5-2	common hawthorn, blackthorn, dog-rose	3	No	Gaps <10%	Hedge x 2 Woodland x 1	No	
H115	143	1.5 / 1	common hawthorn, alder buckthorn, ash, dog-rose	4	No	Gaps <10%	Hedge x 2	No	
H116	43	5 / 3	common hawthorn	1	No	Parallel hedge within 15m	Hedge x 1	No - check if >30 years old	
H117	42			0				No	Part newly planted hedge and part species poor hedge, understorey species diverse in parts
H118	58	6 / 1	alder buckthorn, blackthorn, elder		No	Ditch >1/2 length	Hedge x 2	No	

Ref	Length (m)	Height /width (m)	Woody species along whole length	Average number of woody species/ 30m section	Byway	Associated Features	Connections (pond or woodland scores 2)	Important	Justification
H119	68	6 / 3	hazel, common hawthorn, alder buckthorn, ash, dog-rose. Standard tree: pedunculate oak	6	No	Gaps <10% Ditch >1/2 length 2 standard trees	Hedge x 1	Yes	Includes six woody species and meets at least three Associated Feature criteria
H126	215	4 / 3	field maple, common hawthorn, ash	3	Yes	Gaps <10% Parallel hedge within 15m	Hedge x 4	No	
H127	146	3 / 2	hawthorn, ash, dog-rose, elder	4	Yes	Gaps <10%	Hedge x 3	No	
H128	50			0				No	Species-poor native hedge
H135	100	4 / 3	hazel, holly, blackthorn, elder	4	Yes	Gaps <10% Parallel hedge within 15m	Hedge x 3	Yes	Adjacent to a public right of way and includes at least four woody species plus at least two Associated Features

Table B-2: Boundary features scoped out of hedgerow survey

Ref	Hedge?
H7	Scoped out - not a hedgerow, portion of neighbouring woodland
H8	Scoped out - species poor hedge, dominated by ash and hawthorn
H31	Scoped out - fence line with 5 well-separated hawthorn bushes only
H46	Scoped out - line of trees and not enough woody species, no form done
H58	Scoped out - part of a woodland boundary (wider than 5m)
H64	Scoped out - part of a woodland boundary (wider than 5m)
H68	Scoped out - part of a woodland boundary (wider than 5m)
H69	Scoped out - part of a woodland boundary (wider than 5m)
H70	Scoped out - dense scrub no longer a hedgerow
H72	Scoped out - line of trees and not enough woody species, no form done
H87	Scoped out - dense scrub no longer a hedgerow
H91	Scoped out - hedge defunct and no longer exists, very species poor
H92	Scoped out - line of trees including field maple, holly and common hawthorn, not enough woody species so no form done
H95	Scoped out - lack of management for decades so wider than 5m, surrounded by dense scrub and rough grassland
H97	Scoped out - line of trees, not enough woody species so no form done
H100	Scoped out - wider than 5m, willow species dominant
H103	Scoped out - wider than 5m
H113	Scoped out - ditch not a hedgerow
H129	Scoped out - not a hedgerow but an area of trees and shrubs that is wider than 5m

Annex C: Figures



NOTES

THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DOCUMENTATION.

LEGEND

- THE SCHEME
- LIMITS OF LAND TO BE ACQUIRED OR USED PERMANENTLY OR TEMPORARILY (THE ORDER LIMITS)
- LIMITS OF LAND TO BE TEMPORARILY ACQUIRED FOR SIGNAGE INSTALLATION
- LAND NOT INCLUDED WITHIN THE ORDER LIMITS

HEDGEROW SURVEY RESULTS

- IMPORTANT HEDGEROW
- HEDGEROW
- HEDGEROW - INACCESSIBLE



FIRST ISSUE		GB	JG	13/12/18	P01
Revision on Details		By	Check	Date	Suffix
Purpose of Issue					
DCO SUBMISSION					
Client					
Highways England					
Floor 5					
Two Colmore Square					
38 Colmore Circus					
B4 6BN					
Development Consent Order Number					
TR010027					
Project Title					
M42 JUNCTION 6					
IMPROVEMENT					
Drawing Title					
FIGURE 9.3					
HEDGEROW SURVEY RESULTS					
SHEET 2 OF 2					
Designed MMH	Drawn GB	Checked MMH	Approved JG	Date 13/12/18	
Internal Project No 60543032		Suitability D7			
Scale @ A3 1:7,500		Zone M42			
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Drawing Number HE551485 -ACM		Originator -EGN-		Rev P01	
Location M42_SW_ZZ_ZZ		Type -DR-DC-0032		Role Number	

Filename: K:\GIS Management\60543032 - M42 Jct 6 GIS Folder - GIS\01 - Maps\01 - Figures\New Template\Ecology Figures\FIGURE 9.3.mxd