

# A12 Chelmsford to A120 widening scheme

**TR010060**

## 9.50 Supplementary Hedgerow Report

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**A12 Chelmsford to A120 widening scheme**  
Development Consent Order 202[ ]

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**Supplementary Hedgerow Survey Report**

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# 1 Executive summary

- 1.1.1 This is a supplementary report for the A12 Chelmsford to A120 widening scheme Development Consent Order Application. This report presents the results of additional hedgerow surveys and assessment of whether the results affect the evaluation of hedgerows along the proposed scheme. It also presents the policy and legislative context within which the Environmental Impact Assessment has been carried out. Likely significant effects of the proposed scheme on hedgerows, and mitigation for hedgerows, are considered in Chapter 9: Biodiversity of the Environmental Statement (ES) [APP-076].
- 1.1.2 The survey recorded 26 hedgerows (of the original 30 due for survey, three could not be accessed and one was not a hedgerow) in the vicinity of Inworth Road, of which six were species rich. Seventeen hedgerows qualified as 'priority habitat' and four of the hedgerows were regarded as 'important' under the wildlife and landscape criteria of the Hedgerows Regulations (1997). Note the four 'important' hedgerows also met the criteria for priority habitat.
- 1.1.3 Most hedgerows comprised a limited range of species diversity, however certain species were identified as being indicative of species-rich hedgerows, such as ash *Fraxinus excelsior*, dogwood *Cornus sanguinea*, dog-rose *Rosa canina* and hazel *Corylus avellana*.
- 1.1.4 The four hedgerows that qualified as 'important' hedgerows in line with the criteria for biodiversity are considered to be of **County** Importance for biodiversity.
- 1.1.5 There were 17 hedgerows qualifying as priority habitat, i.e., hedgerows comprised of at least 80% native species. These hedgerows are of **National** Importance for biodiversity.
- 1.1.6 The remaining nine hedgerows surveyed are of **Negligible** Importance for biodiversity.

### 1.1.7

## 2 Introduction

### 2.1 Background

- 2.1.1** The A12 Chelmsford to A120 Widening Scheme (the 'proposed scheme') comprises improvements to the A12 between junction 19 (Boreham) at TL 741094, and junction 25 (Marks Tey) at TL 917238, a distance of approximately 24km, or 15 miles. The proposed scheme involves widening the A12 to three lanes in each direction throughout, where it is not already three lanes. It also includes safety improvements, including closing of existing at grade accesses, and reducing access to cyclists along the dual carriageway by providing an alternative route for walkers, cyclists and horse riders.
- 2.1.2** The proposed scheme would require new crossings of watercourses and potential improvements to existing culvert and bridge crossings. There are eight crossings of main rivers, six of which comprise existing crossings and two of which comprise new crossings on proposed offline sections of road. Three of the crossings would require minor realignments at the crossing points.
- 2.1.3** The proposed scheme is classed as a Nationally Significant Infrastructure Project (NSIP) under the Planning Act (2008), triggering the need to apply for a Development Consent Order (DCO). A DCO application was submitted to the Planning Inspectorate (PINS) by National Highways in August 2022 and was accepted by the Planning Inspectorate on 12 September 2022. The application was supported by an Environmental Statement (ES) which included numerous appendices. Appendix 9.7 Hedgerow Survey Report [APP-131] of the ES summarised the baseline data collected with respect to hedgerows.
- 2.1.4** Due to the iterative nature of the design process in the lead up to DCO submission there were changes in the Order Limits. The survey of a small number of hedgerows, which were not within the provisional Order Limits at the time of the original hedgerow survey, was not completed prior to the DCO submission, however these surveys have since been completed.

### 2.2 Purpose of this report

- 2.2.1** This report presents the results of these additional hedgerows surveys along the B1023 through the village of Inworth undertaken in 2023. Likely significant effects on, and mitigation for, hedgerows are considered in Chapter 9 of the ES, and this report concludes whether the results of the surveys affect the results of that assessment. It presents the policy and legislative context within which the Environmental Impact Assessment (EIA) has been carried out.
- 2.2.2** This report presents the results of surveys undertaken along the B1023 through the village of Inworth in 2023, in areas of land not covered by the original suite of surveys reported in Appendix 9.7 of the ES [APP-131].
- 2.2.3**
- 2.2.4** Survey objectives

- 2.2.5 The key objectives of this survey were to:
- a. survey hedgerows along the B1023 within and adjacent to the Order Limits where these had not previously been surveyed following good practice survey methodology.
  - b. collect information to identify hedgerows qualifying as priority habitat.
  - c. collect information to identify species-rich hedgerows.
  - d. collect information to undertake an assessment of hedgerows against the wildlife and landscape criteria in Schedule 1 of the Hedgerows Regulations 1997.
  - e. undertake a desktop study to identify the historical importance of hedgerows.

### 3 Hedgerow ecology

- 3.1.1 Hedgerows are a distinctive feature of the British countryside, which together with woods, roads, and settlements, give character to the landscape and impart local distinctiveness. Many hedgerows are ancient landscape features and can be hundreds or thousands of years old. These hedgerows are therefore considered as important heritage features within the UK.
- 3.1.2 Hedgerows can comprise a mixture of woodland, scrub, and grassland species, and so as well as containing a wealth of different flora, can provide habitat to many species of fauna. Spread across large areas of the countryside, hedgerows are an essential habitat and refuge for much farmland wildlife (Hedgeline, undated).
- 3.1.3 A hedgerow is defined as (Defra, 2007):
- a. Any boundary line of trees or shrubs (excluding climbers and brambles) over 20m long and less than 5m wide at the base, provided that at one time the trees or shrubs were more-or-less continuous. If a boundary line of trees or shrubs is less than 20m, then it is a hedgerow if it joins another hedgerow at one end.
  - b. The start/end points of a hedgerow are defined as any point of connection between two or more hedgerows, to a woodland or other seminatural habitat such as a pond, or to other features e.g. fences, walls, ditches, roads, or the point at which a hedgerow stops and there is a gap of more than 20m to the next hedgerow.
- 3.1.4 Any bank, wall, ditch or tree within 2m of the centre of the hedgerow and the herbaceous vegetation within 2m of the centre of the hedgerow are included in the hedgerow habitat.
- 3.1.5 Hedgerows are classified into three different types based on their structure, defined in Table 2.1. The three hedgerow types include shrubby hedgerows, shrubby hedgerows with trees and lines of trees.
- 3.1.6 A countryside hedgerow is defined as any hedgerow that is not within, or does not mark the boundary of, a dwelling place or private garden, and is on or next to (Defra, 2019):
- a. land used for agriculture or forestry
  - a. land used for breeding or keeping horses, ponies, or donkeys
  - b. common land
  - c. a village green
  - d. a Site of Special Scientific Interest (SSSI)
  - e. a protected European site such as a Special Area of Conservation (SAC) or Special Protection Area (SPA)



Additional Hedgerow Surveys


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- f. a local or national nature reserve
- g. land belonging to the state.

#### Definition of hedgerow types

Hedgerow type	Definition
Shrubby hedgerow	Tall trees absent or more than 20m apart over most of its length
Shrubby hedgerow with trees	Hedgerows with tall trees less than 20m apart over most of its length, and shrub layer present
Line of trees	Hedgerows with tall trees less than 20m apart over most of its length, and shrub layer absent

## 4 Legislation and policy

### 4.1 Hedgerows Regulations (1997)

4.1.1 The Hedgerows Regulations (1997) provides protection of certain hedgerows as described within the regulations. Any part of these hedgerows may not be removed until permission is granted. An application to remove a hedgerow must be made to the Local Planning Authority (LPA), who will either issue a hedgerow retention or removal notice.

4.1.2 As per Section 6(1)(e) of the regulations, 'the removal of any hedgerow to which these Regulations apply is permitted if it is required... for carrying out development for which planning permission has been granted or is deemed to have been granted'. Consent to remove hedgerows would be authorised through consent of the Development Consent Order (DCO) application, not through an application to the LPA.

4.1.3 A hedgerow is protected if it:

- a. has a continuous length of, or exceeds, 20m (with gaps of 20m or less within the hedgerow)
- b. has a continuous length of less than 20m, but meets another hedge at each end
- c. is a countryside hedgerow.

A hedgerow is deemed 'important' if it:

- a. has existed for at least 30 years; and
- b. satisfies at least one of the criteria listed in the archaeological and history, or wildlife and landscape criteria in Part II of Schedule 1 of the Regulations.

4.1.4 This report considers the wildlife and landscape criteria and the archaeological and historical criteria in Schedule 1 of the Regulations. For reference, these are reproduced in Appendix D (Table D.3) and Appendix E (Table E.1) respectively.

### 4.2 National Networks National Policy Statement

4.2.1 The National Networks National Policy Statement (NNNPS) sets out the Government's policies to deliver the development of NSIPs on the national road and rail networks in England. The Secretary of State uses the NNNPS as the primary basis for making decisions on DCO applications.

4.2.2 Paragraph 5.22 of the NNNPS states that the applicant's assessment should describe any likely significant effects on internationally, nationally, and locally designated sites of ecological conservation importance; protected species; habitats (including irreplaceable habitats such as ancient woodland and veteran trees); and other species identified as being of principal importance for the conservation of biodiversity. The surveys described in this report will inform the assessment of significant effects within the ES.

- 4.2.3 In addition to the national policy set out in the NNNPS, the proposed scheme has also had regard to relevant legislation and local plans and policy.

### **4.3 Priority habitats**

- 4.3.1 The Natural Environment and Rural Communities Act 2006 (NERC) ties together wildlife legislation and planning policies. Section 40 of the Act places a duty on the government and statutory bodies in England, such as National Highways, to consider the conservation of biodiversity when carrying out their normal functions.
- 4.3.2 Section 41 of the Act requires The Secretary of State to publish a list of species and habitats that are of principal importance for the conservation of biodiversity in England (hereafter referred to as 'priority species and habitats'), and to promote the conservation of these species and habitats. The list is published by Natural England and comprises 943 species and 56 terrestrial, freshwater, coastal and marine habitats.
- 4.3.3 The list of priority habitats includes the hedgerows priority habitat. This habitat is defined as any hedgerow where at least 80% of the woody vegetation comprises native species (BRIG, 2011).

## 5 Methodology

### 5.1 Desk study

**5.1.1** The methodology detailed within Section 5 of Appendix 9.7 Hedgerow Survey Report [APP-131] was applied to the hedgerows along the B1023. Due to the iterative nature of the design process in the lead up to DCO submission there were changes in the Order Limits. The survey of a small number of hedgerows, which were not within the provisional Order Limits at the time of the original hedgerow survey, was not completed prior to the DCO submission, however these surveys have since been completed. The survey comprised hedgerows within and immediately adjacent to the Order Limits and in the vicinity of the B1023.

### 5.2 Field study

**5.2.1** The methodology detailed within Section 5 of Appendix 9.7 [APP-131] was applied to the hedgerows along the B1023. Field surveys were conducted on 30<sup>th</sup> and 31<sup>st</sup> March 2023.

#### Limitations

- 5.2.2** The survey was carried out just before the recommended hedgerow survey period which is between April and October (Defra, 2007). Some ground flora may have therefore been present in the hedgerows but were not identified during the surveys. While this may limit the Hedgerows Regulations assessment where information about woodland herbs is required, paragraph 5.2.16 of Appendix 9.7 [APP-131] states that hedgerows surveyed across the scheme in 2020 were found to be poor in woodland herbs, and therefore species richness of a hedgerow was based on the diversity of trees and shrubs only. The same approach has therefore been applied to this report and therefore the restricted ability to record ground flora (i.e., woodland herbs) is not considered to be a significant limitation.
- 5.2.3** The assessment of whether a hedgerow qualifies as priority habitat is based on the proportion of native woody species, which are identifiable all year round, and therefore there are no limitations with respect to the priority habitat assessment.
- 5.2.4** Hedgerows I11, I14 and I15 could not be surveyed due to access restrictions. These hedgerows are scheduled to be retained and therefore the absence of specific data relating to these hedgerows is not considered to affect the conclusions presented in this report.
- 5.2.5** A total of 18 hedgerows could only be surveyed from one side due to access restrictions. However, it was still possible to obtain sufficient information to determine the status, condition and importance of the hedgerows, and therefore this is not considered to affect the conclusions presented in this report.

## 5.3 Analysis

### Priority habitat

- 5.3.1 The results of the survey were used to identify hedgerows qualifying as a priority habitat. A hedgerow becomes a priority habitat if at least 80% of the species that comprise the hedgerow are native woody species (BRIG, 2011).

### Habitat condition

- 5.3.2 The condition of shrubby hedgerows and lines of trees was assessed following the Defra Biodiversity Metric 2.0 (Crosher, *et al.*, 2019). The hedgerow attributes recorded in the field that were used to carry out the assessment are indicated in Table D.2, Annex D.

### Hedgerow Regulations

- 5.3.3 Each feature surveyed was assessed against the wildlife and landscape criteria in Schedule 1 of the Hedgerows Regulations (1997), categorising each as one of:
- a. 'Important' – The hedgerow:
    - i. was a 'countryside hedgerow'
    - ii. was at least 30 years old
    - iii. was at least 20m in length, or if less than 20m then had at least one connection with another hedgerow at both its ends
    - iv. satisfied at least one of the wildlife and landscape criteria in Schedule 1 of the Hedgerows Regulations.
  - b. 'Not important' – The hedgerow met i) to iii) above but failed iv).
  - c. 'Not Applicable (N/A)' – The feature was not a hedgerow or failed to meet one of i) to iii) above.
- 5.3.4 In addition to notable species recorded during the field survey, results of the desk study to identify notable species were used for this assessment.
- 5.3.5 Hedgerows identified in the survey were assessed against the archaeology and heritage criteria in Part II of Schedule 1 of the Hedgerow Regulations (1997), and subsequent guidance issued by Defra in 2002.
- 5.3.6 Historic maps of sufficient age to demonstrate that hedgerows were in existence prior to 1850 in line with the definition in Part II of Schedule 1 of the Hedgerow Regulations 1997 are not available for the Scheme. A comparison was made of currently existing hedgerows with the earliest Ordnance Survey six-inch maps published in the mid-19th century, which identified 21 hedgerows that may be of sufficient age to qualify. These are itemised by a unique

reference number (HID) in Appendix E, Table E.1 of this report. The locations of the hedgerows in Table E.1 are shown in Annex A, Figure 1.

- 5.3.7 Hedgerows are not considered to be heritage assets in their own right but do contribute to the understanding of historic landscape types (HLTs) through their historic use as land parcel boundaries. The assessment of value of HLTs and of the significance of impact of the proposed scheme upon them is included in Chapter 7: Cultural Heritage of the ES. The additional sections of hedgerow identified in this report do not change the assessment presented in Chapter 7.

## 6 Results

### 6.1 Summary

- 6.1.1 Of the 30 hedgerows scheduled for survey, three could not be accessed (as described in 4.2.4) and one was not a hedgerow (I8). Therefore, a total of 26 hedgerows were surveyed, as shown in Figure 1 (Appendix A). Photographs are provided in Appendix B and full results in Appendix C of this report.
- 6.1.2 Of the 26 hedgerows surveyed, 69% were assessed as countryside hedgerows and as having existed for 30 years or more (Table 5.1).
- 6.1.3 The assessment of priority habitat, habitat condition, and assessment against the Hedgerows Regulations (1997) are described in Sections 4.1, 3.3 and 5.3. Full results of the analyses undertaken are provided in Appendix D.

**Summary of countryside hedgerows and ages**

	Countryside hedgerow	Not a countryside hedgerow	Total
Has existed for 30 years or more	18	6	24
Has not existed for 30 years or more	1	1	2
<b>Total</b>	19	7	26

### 6.2 Priority habitat

- 6.2.1 Seventeen hedgerows qualified as priority habitat and are shown in Figure 1. Priority habitat hedgerows are summarised by hedgerow type and species-richness in Table 5.2, and full results of the assessment are provided in Table D.1 in Annex D.

**Numbers of priority habitat by hedgerow type and species-richness**

	Species-rich	Not species-rich	Totals
Shrubby hedgerows	4	4	8
Shrubby hedgerows with trees	2	7	9
Lines of trees	0	0	17

### 6.3 Habitat condition

- 6.3.1 The habitat condition of the hedgerows surveyed is summarised by hedgerow type in Table 5.3. Full condition assessments are provided in Table D.2 in Appendix D.

### Hedgerow habitat condition by hedgerow type

Condition	Shrubby hedgerows	Shrubby hedgerows with trees	Lines of trees	Total
Good	0	2	0	2
Moderate	4	5	0	9
Poor	2	4	0	6

## 6.4 Hedgerows Regulations

- 6.4.1 A total of four hedgerows were assessed as 'important' under the wildlife and landscape criteria in Schedule 1 of the Hedgerows Regulations (1997), shown in Figure 1. A summary of hedgerow importance and species-richness by hedgerow type is provided in Table 5.4. Full results of the assessment are provided in Appendix C and Appendix D.
- 6.4.2 Four hedgerows qualified as 'important' based on a combination of their species diversity and other features, such as presence of a ditch. For one hedgerow (I18) there was also a record of a greenfinch *Carduelis chloris*, the presence of which (as a red list Bird of Conservation Concern), is a qualifying feature for important hedgerows.

### Summary of assessment against the wildlife and landscape criteria in Schedule 1 of the Hedgerows Regulations 1997

Importance / species-richness	Shrubby hedgerows	Shrubby hedgerows with trees	Lines of trees	Total
Important – species-rich	2	1	0	3
Important – not species-rich	1	0	0	1
Not important – species-rich	0	2	0	2
Not important – not species-rich	3	8	0	11
N/A	0	0	0	0



## 7 Discussion

### 7.1 Summary

7.1.1 Of the 30 hedgerows scheduled for survey, three could not be accessed (as described in 4.2.4) and one was not a hedgerow (I8). Of the remaining 26 hedgerows surveyed, six were species-rich, 17 qualified as priority habitat and four were 'important' under the wildlife and landscape criteria of the Hedgerows Regulations (1997). All four 'important' hedgerows also qualified as priority habitat.

### 7.2 Evaluation

7.2.1 Paragraphs 9.11.87 to 9.11.90 of Chapter 9 Biodiversity of the ES [APP-076] present a summary of the construction effects on hedgerows, including the loss of hedgerows. These data were calculated using the hedgerow data set collected in the original suite of surveys (presented in Appendix 9.7 [APP-131]) as shown on Figure 1 of the report.

7.2.2 The data presented in this report update the figures presented in Chapter 9, which states an existing baseline of 39.24km of hedgerow and losses of 15.81km of hedgerows (where losses comprise 3.86km of species-rich hedgerow, 0.43km of species-poor hedgerow and 10.76km of 'important' hedgerow).

7.2.3 Following the surveys, an additional 3.16km of hedgerow were identified, of which 1.00km would be lost (where losses comprise 0.36km of species-rich hedgerow, 0.56km of species-poor hedgerow and 0.16km of 'important' hedgerow).

7.2.4 As per paragraph 9.11.88 of Chapter 9 of the ES [APP-076], loss of hedgerows would be mitigated through the creation of 42.15km of new hedgerow, which once matured would qualify as priority habitat.

7.2.5 For hedgerows qualifying as priority habitat, there would be a temporary moderate adverse level of impact on a **Nationally** important receptor while newly planted hedgerows mature, and therefore the significance of effect is moderate adverse in the short term. Once planting has matured, the level of impact would reduce to minor adverse, and so the residual significance of effect is slight adverse (not significant). The conclusions of a residual significance of **slight adverse** for priority hedgerows and **neutral** for the remaining hedgerows are still considered valid.

7.2.6 For other hedgerows (i.e., 'important' or non-priority), which have a lower (**County**) value, the temporary moderate adverse level of impact while newly planted hedgerows mature would have a slight adverse significance of effect in the short term. Once planting has matured, the level of impact would reduce to **negligible** and so the residual significance of effect is **neutral** (not significant).

7.2.7 Notwithstanding the minor increase in loss of hedgerows, the assessment of effects presented in this report are consistent with those presented in paragraphs 9.11.89 and 9.11.90 of Chapter 9 of the ES [APP-076]. There is

therefore no change in the conclusions of Chapter 9 with respect to hedgerows, and there is no requirement for any additional mitigation above what is already proposed in Chapter 9.

- 7.2.8 The important hedgerows identified within this report have been added to Schedule 9 of the Development Consent Order and the revised Retained and Removed Vegetation Plans (Part 2, Sheet 20) [TR010060/APP/2.1], which will be made available at Deadline 4.
- 7.2.9 Section 14 of Chapter 9 Biodiversity of the ES [APP-076] presents a summary of the biodiversity net gain (BNG) for the proposed scheme. These calculations were based upon a combination of the linear component of the Phase 1 Habitat Survey data, the 2020 hedgerow survey data set and the Retained and Removed Vegetation Plans [APP-035 and AS-017]. As noted in paragraph 1.1.4 of this report, a small number of hedgerows which were not within the provisional Order Limits at the time of the original hedgerow survey were not surveyed prior to DCO submission. Therefore, the data used to inform the BNG calculations did not include these hedgerows. Updating the metric to include the additional existing baseline (3.16km of hedgerows) and losses (1.00km of hedgerows) would result in a minor reduction in the overall predicted biodiversity net gain for hedges, which is forecast as 36% (Table 9.32 of Chapter 9 [APP-076]). However, applying a worst-case approach and assuming all losses would comprise important, native, species-rich hedgerows (which is not the case and is in fact an overestimate of the quality of hedgerows being lost) would still achieve in exceedance of 30% biodiversity net gain overall for the proposed scheme. This is considerably above 10% which would be mandated for future Nationally Significant Infrastructure Projects once the Environment Act (2021) comes into force and therefore the impacts to BNG are considered negligible. There would be no change to the assessment of effects as presented in Chapter 9 of the ES [APP-076] and no requirement for any mitigation in addition to what is already proposed.

## References

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## Appendix A Figures

### Figure 1 Hedgerow study area and results

## Appendix B Photographs

Hedgerow number	Photograph
I1a	
I1b	

Additional Hedgerow Surveys

Hedgerow number	Photograph
I1c	 A photograph showing a dense hedgerow of tall, thin, bare trees and shrubs. The hedgerow runs along a grassy path or field. The sky is overcast.
I1d	 A photograph showing a hedgerow with a large, bare tree in the foreground. In the background, there are buildings, including a white house with a chimney, and other trees. The ground is grassy.

Additional Hedgerow Surveys

Hedgerow number	Photograph
I1e	 A photograph showing a dense, well-maintained hedgerow. The hedge is composed of various green shrubs and trees. In the background, a white house with a grey roof is visible under a cloudy sky. Some bare tree branches are also seen in the upper part of the frame.
I1f	 A photograph of a hedgerow in a rural setting. The foreground is dominated by tall, green grass. The hedgerow itself is a mix of green bushes and taller trees. In the background, there are more trees and a small, light-colored building or shed.

Additional Hedgerow Surveys

Hedgerow number	Photograph
I2	 A photograph showing a dense hedgerow of trees and shrubs on the left side of a green grassy field. The trees are mostly bare, suggesting a winter or early spring setting. The field extends to the right under a grey, overcast sky.
I3	 A photograph of a wet asphalt road with a white dashed line on the left. A tall utility pole with power lines stands on the right side of the road. In the background, there is a dark, dense hedgerow and some trees under a cloudy sky.




Additional Hedgerow Surveys

Hedgerow number	Photograph
I4	 A photograph showing a hedgerow with several trees, including a large, leafless tree in the center. The hedgerow is situated next to a green field under a cloudy sky.
I5a	 A photograph showing a hedgerow with dense green foliage in the foreground. In the background, there is a building and a red excavator. The hedgerow is situated next to a green field under a cloudy sky.

Additional Hedgerow Surveys

Hedgerow number	Photograph
I5b	 A photograph showing a dense, tangled hedgerow with many bare branches and some green foliage. The hedgerow is situated in a grassy field with a body of water visible in the background.
I6a	 A photograph showing a long, straight hedgerow running alongside a grassy path or road. The hedgerow is composed of dense, brownish branches. A utility pole with wires is visible in the background under a cloudy sky.

Additional Hedgerow Surveys

Hedgerow number	Photograph
I6b	 A photograph showing a hedgerow on the left side of a paved road. The hedgerow consists of a mix of trees and dense bushes. The road is asphalt and has a white dashed line on the right side. In the distance, a car is visible on the road. The sky is overcast.
I7	 A photograph showing a hedgerow in a rural landscape. The hedgerow is a dense line of trees and bushes. In the foreground, there is a green field with some bare patches of earth. The sky is overcast and grey.

Additional Hedgerow Surveys

Hedgerow number	Photograph
I9	
I10	



Additional Hedgerow Surveys

Hedgerow number	Photograph
I12	
I13a	

Additional Hedgerow Surveys

Hedgerow number	Photograph
I13b	
I16	

Additional Hedgerow Surveys

Hedgerow number	Photograph
I17	
I18	

Additional Hedgerow Surveys

Hedgerow number	Photograph
I19	
I20	



Additional Hedgerow Surveys

Hedgerow number	Photograph
I21	
I22	

## Appendix C Field survey results

### 7.2.10 Table C.1 Hedgerow survey metadata

HID	Survey date	Side 1	Side 2	Limitations
I1a	31/03/2023	N	S	The survey was only undertaken from one side due to no land access on side 1
I1b	31/03/2023	E	W	The survey was only undertaken from one side due to no land access on side 1
I1c	31/03/2023	N	S	The survey was only undertaken from one side due to no land access on side 2
I1d	31/03/2023	E	W	No survey limitations
I1e	31/03/2023	E	W	The survey was only undertaken from one side due to the road on side 2
I1f	31/03/2023	N	S	The survey was only undertaken from one side due to no land access on side 1
I2	31/03/2023	E	W	No survey limitations
I3	31/03/2023	E	W	The survey was only undertaken from one side due to no land access on side 2
I4	31/03/2023	N	S	No survey limitations
I5a	31/03/2023	N	S	The survey was only undertaken from one side due to no land access on side 1
I5b	31/03/2023	E	W	The survey was only undertaken from one side due to no land access on side 1
I6a	31/03/2023	E	W	The survey was only undertaken from one side due to the road on side 2
I6b	31/03/2023	E	W	The survey was only undertaken from one side due to the road on side 2
I7	31/03/2023	N	S	The survey was only undertaken from one side due to no land access on side 2
I8	N/A			N/A – not a hedgerow
I9	31/03/2023	N	S	The survey was only undertaken from one side due to no land access on side 1

## Additional Hedgerow Surveys

HID	Survey date	Side 1	Side 2	Limitations
I10	31/03/2023	N	S	No survey limitations
I11	N/A	E	W	Could not be surveyed due to access constraints
I12	31/03/2023	E	W	The survey was only undertaken from one side due to the road on side 1
I13a	30/03/2023	NE	SW	No survey limitations
I13b	30/03/2023	E	W	No survey limitations
I14	N/A	N	S	Could not be surveyed due to access constraints
I15	N/A	N	S	Could not be surveyed due to access constraints
I16	30/03/2023	E	W	The survey was only undertaken from one side due to no land access on side 1
I17	30/03/2023	E	W	No survey limitations
I18	30/03/2023	N	S	The survey was only undertaken from one side due to no land access on side 1
I19	30/03/2023	N	S	The survey was only undertaken from one side due to no land access on side 2
I20	30/03/2023	N	S	The survey was only undertaken from one side due to no land access on side 2
I21	30/03/2023	E	W	No survey limitations
I22	30/03/2023	E	W	The survey was only undertaken from one side due to no land access on side 1

**Table C.2 Hedgerow type attributes**

## Additional Hedgerow Surveys

<b>HID</b>	<b>Hedgerow type</b>	<b>Hedgerow shape</b>	<b>Countryside hedgerow</b>	<b>Hedgerow age</b>	<b>Hedgerow description</b>	<b>Length (m)</b>
l1a	Ornamental hedge	Ornamental hedge	Not a countryside hedgerow	Has existed for 30 years or more	An ornamental garden hedgerow comprising mainly of non-native species.	36
l1b	Ornamental hedge	Ornamental hedge	Countryside hedgerow	Has existed for 30 years or more	An ornamental garden hedgerow comprising mainly of non-native species.	30
l1c	Ornamental hedge	Ornamental hedge	Not a countryside hedgerow	Has existed for 30 years or more	An ornamental garden hedgerow comprising mainly of non-native species.	32
l1d	Ornamental hedge	Ornamental hedge	Not a countryside hedgerow	Has existed for 30 years or more	An ornamental garden hedgerow comprising mainly of non-native species.	37
l1e	Ornamental hedge	Ornamental hedge	Not a countryside hedgerow	Has existed for 30 years or more	An ornamental garden hedgerow comprising mainly of non-native species.	51
l1f	Ornamental hedge	Ornamental hedge	Not a countryside hedgerow	Has existed for 30 years or more	An ornamental garden hedgerow comprising mainly of non-native species.	29
l2	Shrubby hedgerow with trees	Trimmed and dense	Countryside hedgerow	Has existed for 30 years or more	A trimmed back hedgerow between two arable fields.	248
l3	Ornamental hedge	Ornamental hedge	Not a countryside hedgerow	Has existed for 30 years or more	An ornamental garden hedgerow comprising mainly of non-native species.	215

## Additional Hedgerow Surveys

<b>HID</b>	<b>Hedgerow type</b>	<b>Hedgerow shape</b>	<b>Countryside hedgerow</b>	<b>Hedgerow age</b>	<b>Hedgerow description</b>	<b>Length (m)</b>
14	Shrubby hedgerow with trees	Trimmed	Countryside hedgerow	Has existed for 30 years or more	A trimmed hedgerow between arable fields either side.	224
15a	Shrubby hedgerow	Trimmed	Countryside hedgerow	Has not existed for 30 years or more	A planted hedgerow between an arable field and a residential garden, still with tree rings.	170
15b	Shrubby hedgerow with trees	Trimmed	Countryside hedgerow	Has existed for 30 years or more	A trimmed hedgerow between an arable field and a residential garden and with dominant hawthorn.	42
16a	Shrubby hedgerow with trees	Untrimmed	Countryside hedgerow	Has existed for 30 years or more	An unmanaged hedgerow running between the B1023 and horse pasture and with dominant hawthorn.	90
16b	Shrubby hedgerow with trees	Untrimmed	Countryside hedgerow	Has existed for 30 years or more	An untrimmed hedgerow comprising dominant bramble and situated between an arable field (to the west) and the B1023 (to the east).	40
17	Shrubby hedgerow	Trimmed	Countryside hedgerow	Has existed for 30 years or more	A trimmed hedgerow associated with a wet ditch and with frequent hawthorn and hornbeam. Situated between the B1023 and horse pasture.	176
18	Not a hedge	Not a hedge	Not a countryside hedgerow	-	Not a hedge – over 10m wide.	92.5

## Additional Hedgerow Surveys

HID	Hedgerow type	Hedgerow shape	Countryside hedgerow	Hedgerow age	Hedgerow description	Length (m)
I9	Shrubby hedgerow with trees	Trimmed	Countryside hedgerow	Has existed for 30 years or more	A trimmed hedgerow residing between an arable field and a residential garden.	135
I10	Shrubby hedgerow	Intensively managed	Countryside hedgerow	Has existed for 30 years or more	An intensively managed (flailed) hedgerow associated with a wet ditch.	80
I12	Shrubby hedgerow with trees	Untrimmed	Countryside hedgerow	Has existed for 30 years or more	An unmanaged hedgerow associated with a stream and situated between an arable field (to the west) and the B1023 (to the east).	130
I13a	Shrubby hedgerow with trees	Trimmed	Countryside hedgerow	Has existed for 30 years or more	A trimmed back hedgerow associated with a stream and residing between arable fields.	100
I13b	Shrubby hedgerow with trees	Untrimmed	Countryside hedgerow	Has existed for 30 years or more	An unmanaged hedgerow running alongside a stream between two arable fields, with abundant blackthorn and bramble.	64
I16	Shrubby hedgerow	Trimmed	Countryside hedgerow	Has existed for 30 years or more	A recently trimmed back hedgerow comprising dominant bramble and situated between an arable field (to the west) and the B1023 (to the east).	164
I17	Shrubby hedgerow with trees	Trimmed	Countryside hedgerow	Has existed for 30 years or more	A trimmed hedgerow situated between an arable field (to the east) and the B1023 (to the west),	158

## Additional Hedgerow Surveys

HID	Hedgerow type	Hedgerow shape	Countryside hedgerow	Hedgerow age	Hedgerow description	Length (m)
					with abundant blackthorn and bramble.	
I18	Shrubby hedgerow	Untrimmed	Countryside hedgerow	Has existed for 30 years or more	An unmanaged hedgerow associated with a wet ditch and with dominant blackthorn. Situated between an arable field and a commercial car park.	155
I19	Shrubby hedgerow	Trimmed	Countryside hedgerow	Has existed for 30 years or more	A recently flailed back hedgerow running alongside a stream and between two arable fields, with abundant blackthorn.	72
I20	Shrubby hedgerow with trees	Trimmed	Countryside hedgerow	Has existed for 30 years or more	A recently flailed back hedgerow running alongside a stream and between two arable fields, with dominant common hawthorn.	92
I21	Non-native ornamental hedgerow	Intensively managed	Not a countryside hedgerow	Has not existed for 30 years or more	An ornamental garden centre hedgerow comprising mainly of non-native species.	178
I22	Shrubby hedgerow with trees	Trimmed	Countryside hedgerow	Has existed for 30 years or more	Manged hedgerow dominated by oak residing between an arable field (to the east) and the B1023 (to the west).	137





## Appendix D Analysis results

Table D.1 Hedgerow species-richness and priority habitats

HID	Average species-richness	Total species-richness	Priority habitat
I1a	N/A	N/A	x
I1b	N/A	N/A	x
I1c	N/A	N/A	x
I1d	N/A	N/A	x
I1e	N/A	N/A	x
I1f	N/A	N/A	x
I2	N/A	N/A	x
I3	N/A	N/A	x
I4	3.7	5	✓
I5a	3.5	7	✓
I5b	4	4	✓
I6a	5	5	✓
I6b	6	7	✓
I7	5	10	✓
I8	N/A	N/A	x
I9	6.5	8	✓
I10	4	7	✓
I12	5	8	✓

## Additional Hedgerow Surveys

HID	Average species-richness	Total species-richness	Priority habitat
I13a	3	7	✓
I13b	4	5	✓
I16	2.5	5	✓
I17	3.5	5	✓
I18	4	7	✓
I19	7	7	✓
I20	4	5	✓
I21	N/A	N/A	x
I22	4	7	✓

**Table D.2 Condition assessment of shrubby hedgerows and shrubby hedgerows with trees**

HID	Condition criteria										Condition
	A1	A2	B1	B2	C1	C2	D1	D2	E1	E2	
I2	✓	✓	✓	✓	✓	X	✓	✓	✓	✓	Good
I4	✓	✓	X	X	X	X	✓	✓	✓	✓	Poor
I5a	✓	X	✓	✓	X	✓	✓	✓	X	✓	Moderate
I5b	✓	✓	X	X	✓	X	✓	✓	X	✓	Moderate
I6a	✓	✓	✓	✓	X	X	✓	X	✓	✓	Moderate
I6b	✓	✓	X	X	X	X	✓	✓	X	✓	Poor
I7	✓	✓	✓	✓	✓	X	✓	✓	✓	✓	Good
I9	✓	✓	✓	X	X	X	X	✓	X	✓	Moderate
I10	✓	✓	✓	X	X	X	✓	✓	X	✓	Moderate
I12	✓	✓	✓	X	X	X	✓	✓	✓	✓	Moderate
I13a	✓	✓	✓	X	X	X	✓	✓	✓	✓	Moderate
I13b	✓	✓	X	X	X	X	✓	✓	X	✓	Poor
I16	✓	✓	✓	X	X	X	✓	✓	X	X	Moderate
I17	✓	✓	X	X	X	X	✓	✓	✓	✓	Poor

## Additional Hedgerow Surveys

Condition criteria											
HID	A1	A2	B1	B2	C1	C2	D1	D2	E1	E2	Condition
I18	✓	✓	✓	✓	X	X	✓	✓	X	X	Poor
I19	✓	✓	✓	✓	X	X	✓	✓	X	✓	Moderate
I20	✓	✓	✓	✓	X	✓	✓	✓	X	✓	Good
I22	✓	✓	X	✓	X	X	✓	✓	X	✓	Moderate

**Table D.3 Assessment against the wildlife and landscape criteria of Schedule 1 of the Hedgerows Regulations 1997<sup>1</sup>**

HID	i	ii	iii	Wildlife and landscape criteria														Importance
				6	7(1)(a)	7(1)(b)	7(1)(c)	7(1)(d)	7(4)(a)	7(4)(b)	7(4)(c)-(e)	7(4)(f)	7(4)(g)	7(4)(h)	7(4)(i)	8(a)	8(b)	
I1a	X	✓	✓	N/A														Not important
I1b	✓	✓	✓	N/A														Not important
I1c	X	✓	✓	N/A														Not important
I1d	X	✓	✓	N/A														Not important
I1e	X	✓	✓	N/A														Not important
I1f	X	✓	✓	N/A														Not important
I2	✓	✓	✓	X	X	X	X	X	X	X	✓	X	✓	X	X	X	✓	Not important
I3	X	✓	✓	X	X	X	X	X	X	X	✓	X	✓	X	X	X	✓	Not important
I4	✓	✓	✓	X	X	X	X	X	X	X	✓	X	X	X	X	✓	X	Not important
I5a	✓	X	✓	N/A														Not important
I5b	✓	✓	✓	X	X	X	X	X	X	X	✓	X	X	X	X	X	X	Not important

<sup>1</sup> Criteria i to iii refer to those in paragraph 4.3.3

## Additional Hedgerow Surveys

				Wildlife and landscape criteria														
HID	i	ii	iii	6	7(1)(a)	7(1)(b)	7(1)(c)	7(1)(d)	7(4)(a)	7(4)(b)	7(4)(c)-(e)	7(4)(f)	7(4)(g)	7(4)(h)	7(4)(i)	8(a)	8(b)	Importance
I6a	✓	✓	✓	X	X	X	X	X	X	✓	✓	X	✓	X	X	X	X	Not important
I6b	✓	✓	✓	X	X	X	X	X	X	X	X	X	✓	X	X	X	X	Not important
I7	✓	✓	✓	X	X	X	X	✓	X	✓	✓	X	✓	✓	X	X	✓	Important
I9	✓	✓	✓	X	X	X	X	X	X	X	✓	✓	X	X	X	✓	✓	Important
I10	✓	✓	✓	X	X	X	X	X	X	X	X	X	✓	X	X	X	X	Not important
I12	✓	✓	✓	X	X	X	X	X	X	X	✓	X	✓	X	X	X	✓	Not important
I13a	✓	✓	✓	X	X	X	X	X	X	X	✓	✓	✓	X	X	X	X	Not important
I13b	✓	✓	✓	X	X	X	X	X	X	X	X	X	✓	X	X	X	✓	Not important
I16	✓	✓	✓	X	X	X	X	X	X	X	X	X	X	X	✓	X	X	Not important
I17	✓	✓	✓	X	X	X	X	X	X	X	✓	X	X	✓	✓	X	X	Not important
I18	✓	✓	✓	✓	X	X	X	X	X	✓	X	X	✓	✓	X	X	X	Important
I19	✓	✓	✓	X	X	✓	X	✓	X	✓	✓	X	✓	✓	X	X	✓	Important
I20	✓	✓	✓	X	X	X	X	X	X	✓	✓	X	✓	✓	X	X	✓	Not important
I21	X	✓	✓	N/A														Not important

Additional Hedgerow Surveys

				Wildlife and landscape criteria														
HID	i	ii	iii	6	7(1)(a)	7(1)(b)	7(1)(c)	7(1)(d)	7(4)(a)	7(4)(b)	7(4)(c)-(e)	7(4)(f)	7(4)(g)	7(4)(h)	7(4)(i)	8(a)	8(b)	Importance
I22	✓	✓	✓	X	X	X	X	X	X	✓	✓	X	X	✓	✓	X	✓	Not important

## Appendix E Archaeology and History

**Table E.1 Hedgerows conforming to the archaeology and heritage criteria of the Hedgerow Regulations 1997**

HID	Easting	Northing	Confirmed Date	Notes
I2	588047	218306	1881	
I3	588002	218229	1881	
I4	588134	218167	1881	Former Inworth \ Messing Parish Boundary
I5	587919	218163	1881	
I6	588025	218109	1881	
I7	588127	218049	1881	
I8	588015	217800	1881	
I9	588072	217853	1881	
I10	587992	217726	1881	
I11	588007	217666	1881	
I12	588081	217738	1881	
I13	588217	217681	1881	
I14	588062	217665	1881	
I15	588051	217562	1881	
I16	588158	217625	1881	
I17	588177	217630	1881	
I18	588152	217517	1881	
I19	588247	217596	1881	
I20	588315	217640	1881	
I21	588257	217472	1881	
I22	588260	217501	1881	

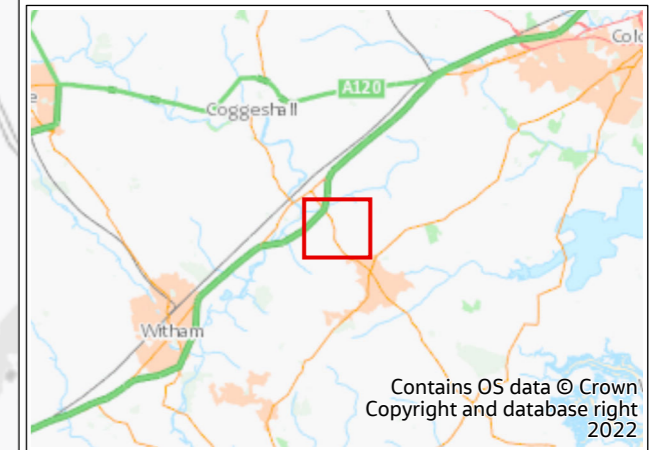
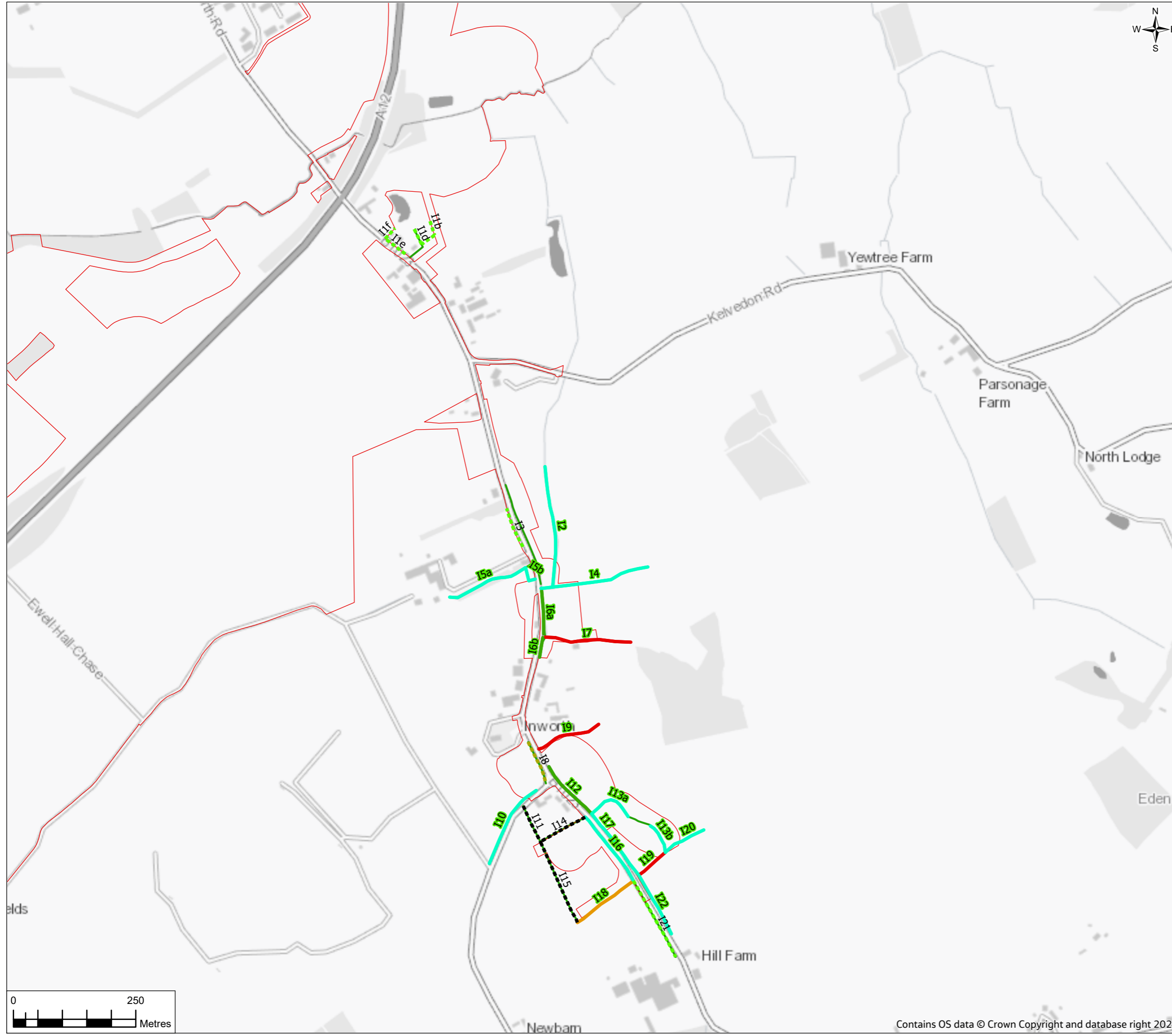


**FIGURE 1**



**Legend**

- Order Limits
- Hedgerows**
- Important – species rich // Priority
- Important – species poor // Priority
- Not important – species rich // Priority
- Not important – species poor // Priority
- Not important – N/A
- Not a hedgerow (other boundary feature)
- Not surveyed
- Priority Habitat**
- Priority
- Non priority



P01	5/04/23	Initial issue	JC	LW	NP	SG
Rev.	Rev. Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd

Client

Project

**REGIONAL DELIVERY PARTNERSHIP  
A12 CHELMSFORD TO A120 WIDENING SCHEME**

Drawing Title

**HEDGEROW SURVEYS RESULTS  
INWORTH 2023  
SHEET 1 OF 1**

Drawing Status **S3 - SUITABLE FOR COMMENTS AND REVIEW**

Scale @ A3	1:7,500	DO NOT SCALE
Jacobs No.	B36601D1	
Client No.	HE551497	Rev P01

Drawing Number **XXXX**

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