



Greater Cambridge Partnership

Cambourne to Cambridge

Hedgerow Survey Report





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WSP

62-64 Hills Road

Cambridge

CB2 1LA

Phone: +44 1223 558 050

WSP.com

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Annex A

Study & Survey Areas

1 Introduction

1.1 Project Background

- 1.1.1. The Cambourne to Cambridge project (C2C) is a proposed new 13.6km public transport route linking Cambourne and Cambridge. It will include a dedicated busway serving communities in Cambourne and the proposed Bourn Airfield development, as well as in Hardwick, Coton and the West Cambridge campus. A service road, to be used as a path for active travel, particularly by cyclists and pedestrians, will run alongside the busway. A new travel hub will be provided at Scotland Farm.
- 1.1.2. Scheme details are provided in the main report to the Environmental Statement (ES).

1.2 Ecological Background

- 1.2.1. The Scheme intersects multiple hedgerows throughout the Scheme. This includes hedgerows that will be intersected by the new road and active travel path, as well as hedgerows that will require new access ways for construction and access into third party land. All hedgerows consisting predominantly (80% or more) of at least one native woody species are considered a Habitat of Principal Importance (HPI) under the Natural Environment and Rural Communities (NERC) Act 2006. In addition, certain hedgerows are Important Hedgerows under The Hedgerows Regulations (1997), if they meet the criteria set out within the legislation.
- 1.2.2. Cambridge Ecology Ltd undertook hedgerow surveys in 2021 (Cambridge Ecology, 2021). However, due to access issues it was not possible to survey all hedgerows that could be impacted by the Scheme. Additionally, the route has changed since their surveys in 2021 resulting in new hedgerows requiring survey.
- 1.2.3. Cambridge Ecology identified nine important hedgerows throughout their survey area. Of these important hedgerows, six are located within the current Scheme boundary. These included hedgerows H1, H6, H7, H8, H13 and H28.
- 1.2.4. From further survey, H6 is no longer considered to meet the definition of a hedgerow as it is no longer managed as a hedgerow and a large expanse of woodland has been planted directly adjacent as part of the dualling of the A428. This hedgerow is now considered to form part of this woodland area.

1.3 Brief and Objectives

- 1.3.1. WSP UK Ltd was commissioned by Greater Cambridge Partnership (GCP) to undertake a Hedgerow survey and report, with the following objectives:
 - Determine whether hedgerows could be classed as 'Important Hedgerows' under Wildlife and Landscape criteria listed in the Regulations in order to complete the baseline to inform impact assessment and mitigation.

2 Methodology

2.1 Survey Area

- 2.1.1. The hedgerow survey area consisted of hedgerows within the Scheme boundary which would likely be directly impacted by the Proposed Development and had not been surveyed in 2021. Where access restrictions in 2021 restricted surveys to one side of a hedgerow, these were re-surveyed to establish a baseline for this assessment.

2.2 Field Survey

- 2.2.1. The hedgerows were surveyed with regard for the information required by the Wildlife and Landscape Criteria of the Regulations.
- 2.2.2. In accordance with the Regulations the hedgerows were measured from the point or points where they met another hedgerow(s) or where there was a gap of more than 20 metres between the end of the hedgerow and the nearest line of hedgerow. Gaps within a hedgerow were included in the total length provided they were 20 metres or less in length.
- 2.2.3. Notes were made on the following in accordance with the criteria outlined in Schedule 1, Part II of the Regulations:
- Number of woody species, on average, in a 30 metre length;
 - Presence of rare tree species such as black poplar *Populus nigra* ssp. *betulifolia*, large-leaved lime *Tilia platyphyllos* and small-leaved lime *Tilia cordata* and wild service tree *Sorbus torminalis*;
 - Number of standard trees, on average, within each 50 metre section;
 - Number of gaps in the hedge;
 - Presence of woodland ground flora species listed in Schedule 2 of the Regulations;
 - Presence of ditches, banks or walls;
 - Number of connections with other hedgerows, ponds or woodland;
 - Presence of parallel hedges within 15 metres of the hedge; and
 - Presence of bridleways, footpaths, byways or public paths.
- 2.2.4. In accordance with the Regulations the number of woody species present per 30 metre length was recorded in the following manner:
- Where the length of the hedgerow did not exceed 30 metres, the total number of woody species present in the hedgerow was recorded;
 - Where the hedgerow was between 30 metres and 100 metres in length, the number of woody species present in the central 30 metre stretch was recorded;
 - Where the hedgerow length was between 100 metres and 200 metres, the number of woody species present in the central 30 metre stretches of the two halves of the hedgerow were recorded and the mean of the two calculated; and

- Where the length of the hedgerow was over 200 metres, the numbers of woody species present in the central 30 metre stretch of each third of the hedgerow were recorded and the mean of the three calculated.

2.2.5. With regard for the Hedgerow Survey Handbook (2nd Edition) (DEFRA, 2007) further details, not required under the Regulations, such as hedgerow height, width, integrity, structure, and management history were recorded.

2.3 Evaluation of Results

2.3.1. The field survey information was then assessed to establish whether each hedge fulfilled the Wildlife and Landscape criteria within the Regulations.

2.4 Dates of Survey and Personnel

2.4.1. The Hedgerow surveys were led by experienced and qualified habitat surveyors, with experience applying the Hedgerow Regulations. The surveys were undertaken in May and June 2022.

2.5 Notes and Limitations

- 2.5.1. Only Wildlife and Landscape criteria of the Regulations were considered within this assessment; therefore, it is possible hedgerows which do not qualify as 'important hedgerows' under these criteria may still qualify under archaeology and history criteria.
- 2.5.2. Hedgerow 12 has not been surveyed by Cambridge Ecology and was within Scheme boundary. However, it is within the Bourn Airfield development area and additionally was considered unlikely to be impacted. For these reasons a hedgerow survey was not undertaken for this hedgerow.

3 Results

3.1 Field Survey

3.2 Overview

- 3.2.1. Of the 14 hedgerows surveyed, one hedgerow (Hedgerow 11) qualifies as important under the Wildlife and Landscape criteria of the Regulations.
- 3.2.2. All hedgerows apart from Hedgerow 10 qualify as HPI.

3.3 Ecological Field Survey of Hedgerows

- 3.3.1. 15 hedgerows were identified within the Site and subject to survey. Hedgerow locations are shown on **Figure TR5-10-1-1, Annex A**.

Hedgerow 1

- 3.3.2. Hedgerow 1 is located in the centre of the Scheme, in the southeast of Coton Orchard. The Hedgerow was unmanaged with gaps and approximately 50m long. The hedgerow was approximately 1.5m to tall and 1.5m wide. It had one woody species, dominated by Common Hawthorn *Crataegus monogyna* with Bramble *Rubus fruticosus* agg. also frequent and had a field layer including Common Nettle *Urtica dioica* and occasional Ground Ivy *Glechoma hederacea*.
- 3.3.3. There were two associated features with this hedgerow included a dry ditch running directly alongside the hedgerow and four standard trees growing.
 - Important under the Hedgerow Regulations 1997: No
 - HPI under the NERC Act 2006: Yes

Hedgerow 2

- 3.3.4. Hedgerow 2 is located in the centre of the Scheme, in the south of Coton Orchard. The Hedgerow was untrimmed with outgrowths and approximately 800m long. The hedgerow was approximately 2m tall and 1m wide. The hedgerow had five woody species growing dominated by Common Hawthorn, Blackthorn *Prunus spinosa*, Elm *Ulmus* sp. with frequent Common Ash *Fraxinus excelsior* and occasional Elder *Sambucus nigra*. Additional non-woody species in the hedgerow included Bramble and Common Ivy *hedera helix*. The ground flora included Common Nettle and Cocksfoot *Dactylis glomerata*. The hedgerow had on average at least one standard tree every 50m.
 - Important under the Hedgerow Regulations 1997: No
 - HPI under the NERC Act 2006: Yes

Hedgerow 3

- 3.3.5. Hedgerow 3 is located in the centre of the Scheme in the west of Coton Orchard. The Hedgerow was untrimmed with outgrowths and approximately 180m long. The hedgerow

was approximately 2.5m tall not including the trees growing and 1m wide. The hedgerow had five woody species growing with dominant Blackthorn and Common Alder *Alnus glutinosa* trees growing, frequent Common Hawthorn and Dog Rose *Rosa canina*. Additional non woody species in the hedgerow included Common Ivy. The ground flora was dominated by Cocksfoot and Perennial Rye-grass *Lolium perenne*. The hedgerow had on average at least one standard tree every 50m.

- Important under the Hedgerow Regulations 1997: No
- HPI under the NERC Act 2006: Yes

Hedgerow 4

- 3.3.6. Hedgerow 4 is located in the centre of the Scheme, to the south of Saint Neots Road. The hedgerow was trimmed and dense and 1070m long. The hedgerow was approximately 1.5m wide and 2m tall. Google Earth indicated that this hedgerow was less than 30 years old. It comprised common hawthorn.

- Important under the Hedgerow Regulations 1997: No
- HPI under the NERC Act 2006: Yes

Hedgerow 5

- 3.3.7. Hedgerow 5 is located in the centre of the Scheme on the eastern side of Long Road. The Hedgerow was trimmed and dense and approximately 120m long. The hedgerow was approximately 1.5m tall and 1m wide. The hedgerow had one woody species and was Common Hawthorn.

- Important under the Hedgerow Regulations 1997: No
- HPI under the NERC Act 2006: Yes

Hedgerow 6

- 3.3.8. Hedgerow 6 is located in the centre of the Scheme along the western side of long road. The Hedgerow was trimmed and dense and approximately 900m long. The hedgerow was approximately 1.5m tall not including the trees growing and 1m wide. The hedgerow had five woody species including Elm, Common Ash, Common Hawthorn, Dog Rose and Blackthorn. Additional non-woody species included Bramble. The ground flora was dominated by Barren Brome *Bromus sterilis* with abundant Broadleaved Dock *Rumex obtusifolius* and Bristly Oxtongue *Helminthotheca echioides*. The hedgerow was associated with a ditch.

- Important under the Hedgerow Regulations 1997: No
- HPI under the NERC Act 2006: Yes

Hedgerow 7

3.3.9. Hedgerow 7 is located in the centre of the Scheme along the southern side of St Neots Road. The Hedgerow was intensively managed and approximately 400m long. The hedgerow was approximately 1.5m tall not including the trees growing and 1m wide. The hedgerow had five woody species growing including Hawthorn, Blackthorn, Elm, Dog Rose, Bramble, and Common Ash. Additional non-woody species in the hedgerow included bramble. The ground flora was dominated by barren brome with abundant broadleaved dock and bristly oxtongue. The hedgerow had standard mature trees growing but these only averaged one tree per 100m of hedgerow.

- Important under the Hedgerow Regulations 1997: No
- HPI under the NERC Act 2006: Yes

Hedgerow 8

3.3.10. Hedgerow 8 is located in the centre of the Scheme along the southern side of St Neots Road. The Hedgerow was trimmed and dense and approximately 500m long. The hedgerow was approximately 1.5m tall not including the trees growing and 1m wide. The hedgerow had four woody species growing with dominant Blackthorn and Common Hawthorn, frequent Dog Rose and occasional Field Maple *Acer campestre*. The ground flora had abundant Barren Brome and Soft Brome *Bromus hordeaceus*, False Oat Grass *Arrhenatherum elatius* and Cocksfoot and frequent herbs including Bristly Oxtongue, Smooth Tare *Vicia tetrasperma* and Common Hogweed *Heracleum sphondylium*. The hedgerow had gaps which congregated to more than 10% of the hedgerow length. The hedgerow was associated with a ditch.

- Important under the Hedgerow Regulations 1997: No
- HPI under the NERC Act 2006: Yes

Hedgerow 9

3.3.11. Hedgerow 9 is located in the centre of the Scheme along the southern side of St Neots Road to the west of Hedgerow 7. The Hedgerow was trimmed and dense and approximately 0.13km long. The hedgerow was approximately 1.5m and 1m wide. The hedgerow had five woody species growing with dominant Hawthorn and Blackthorn, frequent Dog Rose and Common Ash and occasional English Oak *Quercus robur*. Additional non-woody species in the hedgerow included Common Ivy, Black Bryony *Dioscorea communis* and Bramble. The ground flora was dominated by Barren Brome, Soft Brome and Creeping Thistle *Cirsium arvense* as well occasional Bristly Oxtongue, Doves Foot Cranesbill *Geranium molle*, Common Field Speedwell *Veronica agrestis*. The hedgerow had five trees growing, less than one tree per 50m of the hedgerow on average.

- Important under the Hedgerow Regulations 1997: No
- HPI under the NERC Act 2006: Yes

Hedgerow 10

3.3.12. Hedgerow 10 is located to the east of Hardwick and runs parallel to a residential property along Cambridge Road. The hedgerow marks the boundary between the property and the adjacent arable field to the east. The hedgerow was dominated by Plum *Prunus domestica*, a non-native species which comprises approximately 80% or more of the woody species present. Additionally, there were four native woody species including Common Ash, Common Hawthorn, English Oak and Dog Rose. The hedgerow was tall and leggy and on average 4m tall and 2m wide. The Hedgerow had one connection to another hedgerow and on average one tree every 50m.

- Important under the Hedgerow Regulations 1997: No
- HPI under the NERC Act 2006: No

Hedgerow 11

3.3.13. Hedgerow 11 is located along Scotland Road to the north of the Scheme. The hedgerow was trimmed and dense and approximately 2.5m wide and 1.5m wide. The hedgerow had six woody species dominated by Blackthorn and Common Hawthorn with frequent Elm, Common Ash and English Oak and Dog Rose. Additional non-woody species included Black Bryony *Dioscorea communis*. The hedgerow was adjacent to a public footpath.

3.3.14. There were four associated features with this hedgerow which included a dry ditch running directly alongside the hedgerow, mature English Oak trees, on average at least one every 50m, a footpath alongside the hedgerow and a hedgerow running parallel, approximately 15m.

- Important under the Hedgerow Regulations 1997: Yes
- HPI under the NERC Act 2006: Yes

Hedgerow 12

3.3.15. Not surveyed.

Hedgerow 13

3.3.16. Hedgerow 13 is located in the west of the Scheme on the southern side of Broadway road. The Hedgerow was intensively managed and approximately 80m long. The hedgerow was approximately 1.5m tall not including the trees growing and 1m wide. The hedgerow had one woody species dominated by Common Hawthorn. The ground flora was modified grassland dominated by Perennial Ryegrass

- Important under the Hedgerow Regulations 1997: No
- HPI under the NERC Act 2006: Yes

Hedgerow 14

3.3.17. Hedgerow 14 is located in the west of the Scheme where the Scheme enters through Cambourne from Broadway. The Hedgerow was intensively managed and recently planted.

The hedgerow was approximately 1.5m tall and 1m wide. The hedgerow had one woody species growing dominated by Common Hawthorn. Google Earth indicates the hedgerow was younger than 30 years old, which is supported by its visual appearance.

- Important under the Hedgerow Regulations 1997: No
- HPI under the NERC Act 2006: Yes

3.4 Protected Species

- 3.4.1. Section 3.3 of this report assesses hedges based on botanical criteria. A hedge may also qualify as an important hedgerow if it contains animal or plant species which are contained within and of the lists within the Hedgerows Regulations 1997 Schedule 6 (a).
- 3.4.2. No plant species listed on Schedule 8 of the Wildlife and Countryside Act 1981 (and subject to full protection) were recorded during field surveys that would qualify a hedgerow as an important hedgerow.
- 3.4.3. Data obtained from protected species surveys undertaken across the scheme as part of the wider ecological assessment has been cross-referenced to inform whether any of the hedgerows qualify as important solely on the basis of Schedule 6 (a). No protected species were recorded during field surveys that would qualify a hedgerow as an important hedgerow.

4 Summary

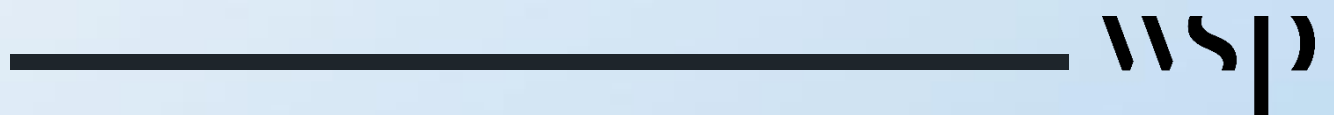
- 4.1.1. One of the fourteen hedgerows surveyed qualified as important under Wildlife and Landscape criteria of the Hedgerow Regulations. Hedgerow 11 qualifies due to having six species per 30m of hedgerow with four associated features.
- 4.1.2. All the hedgerows within the Site except for Hedgerow 10 qualify as HPI in accordance with the NERC Act.
- 4.1.3. Hedgerow 12 was not surveyed, as it is located within the Bourn Airfield development area.

5 References

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Annex A

Study & Survey Areas





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- Legend
- Hedgerow Survey Results
- Not important
 - Not surveyed
 - Important
- C2C Scheme Boundary (DF4)
- Scheme Boundary (at 2022)
- ESRI Satellite (ArcGIS/World_Imagery)

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Revision Details	By Check	Date	Suffr

Drawing Status

FINAL

Job Title

Cambourne to Cambridge

Drawing Title

Hedgerow Map (west)

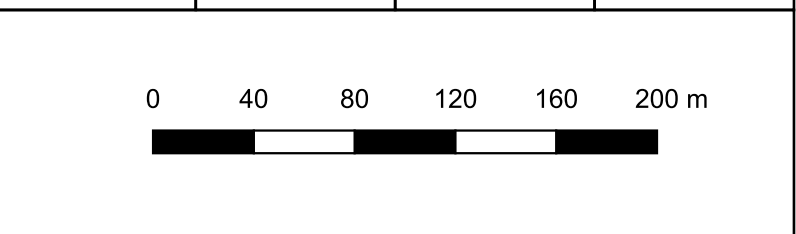
Scale at A1

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Drawing Number

1

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Legend

Hedgerow Survey Results

- Not important
- Not surveyed
- Important

C2C Scheme Boundary (DF4)

Scheme Boundary (at 2022)

ESRI Satellite (ArcGIS/World_Imagery)

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Revision Details	By Check	Date	Suffr
Drawing Status	FINAL		
Job Title	Cambourne to Cambridge		
Drawing Title	C2C Hedgerow Map (east)		
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Drawn	UKMDP002		
Stage 1 Check MP	Stage 2 Check IE	Originated EM	Date 04/09/2023

0 100 200 300 400 500 m

Drawing Number

2



62-64 Hills Road
Cambridge
CB2 1LA

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