

# **High Speed Rail (Crewe – Manchester)**

## **Background information and data accompanying SES1 and AP1 ES**

### **Ecology and biodiversity**

BID EC-011-00000 SES1 and AP1 ES

Ecological baseline data – bats

MA01: Hough to Walley's Green

MA02: Wimboldsley to Lostock Gralam

MA03: Pickmere to Agden and Hulseheath

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## Department for Transport

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# Background Information and Data accompanying Supplementary Environmental Statement 1 and Additional Provision 1 Environmental Statement

Ecology and biodiversity  
BID EC-011-00000 SES1 and AP1 ES  
MA01, MA02 and MA03  
Ecological baseline data – bats

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## 1 Introduction

- 1.1.1 This document sets out Background Information and Data (BID) that accompanies the High Speed Rail (Crewe – Manchester) Supplementary Environmental Statement 1 (SES1) and Additional Provision 1 Environmental Statement (AP1 ES)<sup>1</sup>.
- 1.1.2 This document sets out baseline data for bats not reported in the Background Information and Data report<sup>2</sup> (the main BID report) that accompanied the High Speed Rail (Crewe – Manchester) Environmental Statement published in 2022<sup>3</sup> (the main ES). It should be read in conjunction with the main BID report, Ecological baseline data – bats (see main BID EC-011-00001) that accompanied the main ES.
- 1.1.3 Baseline data covering other habitats and species are contained in the following SES1 and AP1 ES ecological baseline data reports:
- Ecological baseline data – National Vegetation Classification and ancient woodland (BID EC-004-00000 SES1 and AP1 ES);
  - Ecological baseline data – amphibians (BID EC-007-00000 SES1 and AP1 ES); and
  - Ecological baseline data – other (BID EC-017-00000 SES1 and AP1 ES) containing data relating to habitats, hedgerows, birds, ponds and canals, river habitat, otter and water vole.
- 1.1.4 This document covers the following community areas (CA):
- Hough to Walley's Green (MA01);
  - Wimboldsley to Lostock Gralam (MA02); and
  - Pickmere to Agden and Hulseheath (MA03).
- 1.1.5 Maps referred to in this report are contained in the SES1 and AP1 ES Background Information and Data, Ecology Map Book: Map Series EC-05 and EC-06 that accompanies the SES1 and AP1 ES.

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<sup>1</sup> High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Supplementary Environmental Statement 1 and Additional Provision 1 Environmental Statement*. Available online at: <https://www.gov.uk/government/collections/hs2-phase-2b-crewe-manchester-supplementary-environmental-statement-1-and-additional-provision-1-environmental-statement>.

<sup>2</sup> High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Background Information and Data*. Available online at: <https://www.gov.uk/government/collections/hs2-phase2b-crewe-manchester-environmental-statement>.

<sup>3</sup> High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Environmental Statement*. Available online at: <https://www.gov.uk/government/collections/hs2-phase2b-crewe-manchester-environmental-statement>.

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1.1.6 In order to differentiate between the original scheme and the subsequent changes, the following terms are used:

- ‘the original scheme’ – the Bill scheme submitted to Parliament in January 2022, which was assessed in the main ES;
- ‘the SES1 scheme’ - the original scheme with the changes described in SES1 that are within the existing powers of the Bill; and
- ‘the AP1 revised scheme’ – the original scheme as amended by the SES1 changes and AP1 amendments.

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## 2 Bats

### 2.1 Methodology

- 2.1.1 The assessment scope, key assumptions and limitations are as set out in the main ES Environmental Impact Assessment Scope and Methodology Report (SMR) (see Volume 5, Appendix: CT-001-00001 in the main ES)<sup>4</sup>.
- 2.1.2 Details of the standard methodology utilised for bat surveys are provided in the Technical note – Ecology and biodiversity - Ecological field survey methods and standards (FSMS) which is included within the SMR in the main ES.
- 2.1.3 The scoping, desk study<sup>5,6,7,8</sup> exercises and surveys reported can be found in the main BID report Ecological baseline data – bats (BID EC-011-00001) which accompanied the main ES. This section contains the outcomes of surveys undertaken that were not reported in the BID document that accompanied the main ES. This is either because the survey reporting process had not been completed to inform the assessment within the main ES, or because the surveys have been undertaken since production of the main ES, including on additional land required for the construction of the AP1 revised scheme.
- 2.1.4 Map Series EC-05 and EC-06 in the SES1 and AP1 ES Background Information and Data, Ecology Map Book respectively illustrate the bat roosts and activity undertaken between January 2021 and July 2021. Map Series EC-05 illustrates the most important roost at any single building or tree. For example, if a building has an occasional common pipistrelle roost and a maternity soprano pipistrelle roost, the map symbology will only show the maternity roost. If a building has multiple occasional roosts the symbology will illustrate a multiple roost. It should be noted that EC-06 only covers MA02 and MA03.

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<sup>4</sup> High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Environmental Statement, Environmental Impact Assessment Scope and Methodology Report*, Volume 5, Appendix: CT-001-00001. Available online at: <https://www.gov.uk/government/collections/hs2-phase2b-crewe-manchester-environmental-statement>.

<sup>5</sup> Cheshire Wildlife Trust (2007), *Cheshire region Biodiversity Action Plan*. Available online at: <https://www.cheshirewildlifetrust.org.uk>.

<sup>6</sup> GMLRC, *Greater Manchester Local Record Centre*. Available online at: <https://www.gmwildlife.org.uk/>

<sup>7</sup> Merseyside BioBank, *Local Biodiversity Records centre for North Merseyside*. Available online at: <http://www.MerseysideBioBank.org.uk>.

<sup>8</sup> rECOrd, *Local Biological Records Centre serving Cheshire*. Available online at: <http://www.record-lrc.co.uk>.

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## **2.2 Deviations, constraints and limitations**

- 2.2.1 Surveys undertaken were limited to locations where landowner permission had been obtained.
- 2.2.2 Tree climbing surveys were completed to assess the presence or absence of roosts in place of emergence and re-entry surveys, where safe and effective.
- 2.2.3 Climbed inspection of trees were carried out instead of the emergence surveys specified in the FSMS. This deviation was agreed with Natural England and allowed trees to be surveyed at a faster rate, providing more data to inform the SES1 and AP1 ES.

### **Trees**

- 2.2.4 Additional surveys to those reported in main ES were undertaken from January 2021 until July 2021. Detailed tree climbing inspection surveys of some trees were not possible due to health and safety risks because they overhung roads or waterbodies, were close to overhead lines or were unsafe due to tree decay or access constraints. If trees could not be climbed for the above reasons, bat tree emergence surveys were scheduled to be completed based on the overall highest roosting potential of the trees' sub-features from ground level assessment.
- 2.2.5 One constraint when undertaking these types of tree surveys was adverse weather, which included high winds, rain and cold temperatures. Adverse weather affects ground level surveys by reducing visibility of features and impedes climbed inspections owing to health and safety concerns. These conditions are also unsuitable to conduct bat emergence surveys and, therefore, scheduled surveys were necessarily cancelled when conditions were adverse. This impeded completion of emergence surveys at sites across the land required for the AP1 revised scheme.
- 2.2.6 Surveys were also constrained by health and safety issues when trees were assessed as being unsafe to climb. To address this, ground assessments and emergence surveys were carried out to assess the potential of these trees to support roosting bats.
- 2.2.7 Tree climbing surveys were carried out throughout the year. During winter months, whilst there was a reduced likelihood of encountering bats in accessible cavities, these surveys were continued in order to rule out, or downgrade, a proportion of the trees from high/medium to lower roost potential at an early date. Droppings collected from accessible cavities could also confirm roost presence.

### **Buildings and structures**

- 2.2.8 No buildings were subject to an internal survey due to Covid-19 restrictions.



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### Activity surveys

- 2.2.9 Where access was not possible, surveys were restricted to public rights of way.
- 2.2.10 Equipment malfunctions and theft during some surveys meant recordings were corrupted or missing and the data could not be used. This did not occur enough times to be significant; however, where it occurred, this has been recorded in the tables of data for activity surveys and static detector monitoring results.
- 2.2.11 Adverse weather conditions caused surveys to be cancelled or limited the amount/type of recorded bat activity. However, the less labour-intensive nature of activity surveys, compared with the survey regime for emergence surveys, allowed more flexibility in re-scheduling surveys when conditions were suitable. The constraint of adverse conditions on activity surveys was therefore relatively low.

### 2.3 Baseline

- 2.3.1 Table 1 to Table 23 provide detail on the new bat baseline information for MA01 – MA03. The records are mapped within the SES1 and AP1 ES Background Information and Data, Ecology Map Book: Map Series EC-05 and EC-06 which accompanies the SES1 and AP1 ES.

### Hough to Walley's Green (MA01)

#### Roosting (trees)

- 2.3.2 A total of 108 trees in the Hough to Walley's Green area (MA01) were subject to an initial ground assessment between January 2021 and July 2021. Following these surveys:
- no bat roosts were confirmed;
  - 30 trees were assessed as having high potential to support roosting bats;
  - 34 trees were assessed as having moderate potential to support roosting bats; and
  - 44 trees were assessed as having low or negligible potential to support roosting bats. These trees were subsequently scoped out of further survey.
- 2.3.3 Of the trees previously surveyed from the ground between 2017 and 2020, four were subject to tree climbing inspection surveys, with the following results:
- one tree was assessed as having high potential to support roosting bats. This tree was previously assessed as having moderate potential from the initial ground assessment;
  - one tree was confirmed to have moderate potential to support roosting bats, as previously recorded in the initial ground assessment; and

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- two trees were assessed as having low potential to support roosting bats, both of which were previously assessed as having high potential from the initial ground assessment. These trees were subsequently scoped out of further survey.

### **Roosting (buildings and structures)**

2.3.4 A total of 27 buildings in the Hough to Walley's Green area (MA01) were subject to an external buildings and structures assessment between January 2021 and July 2021. Following these surveys:

- no bat roosts were confirmed in buildings or structures;
- five buildings and structures were assessed as having high potential to support roosting bats;
- four buildings and structures were assessed as having moderate potential to support roosting bats; and
- 18 buildings and structures were assessed as having low or negligible potential to support roosting bats. These buildings and structures were subsequently scoped out of further survey.

2.3.5 During the emergence/re-entry surveys in 2021, three roosts were identified in three buildings that were assessed between 2017 and 2020, as follows:

- two confirmed roosts in two buildings that were previously assessed as having high potential to support roosting bats; and
- one confirmed roost in one building that was previously assessed as having moderate potential to support roosting bats.

2.3.6 No buildings required survey within the 100m buffer from the land required for the AP1 revised scheme.

2.3.7 Details of confirmed roosts within buildings and structures in the Hough to Walley's Green area (MA01) are provided in Table 1.

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**Table 1: Confirmed roosts within buildings and structures within MA01**

Survey code	CA	Location	Ordnance Survey (OS) grid reference	Building/ structure type	Species confirmed to be using the roost	Date of peak count and nature of survey	Roost type	Roost description	Distance from the AP1 revised scheme (m) and orientation
CH256013_L1 5042_BS3_F00 3_260521	MA01	Broughton Road, Coppenhall	SJ70335746	Barn	Common pipistrelle (20)	26 May 2021, emergence survey	Possible maternity	A two storey, brick-built barn with a pitched slate roof. Used for storage. Double wooden doors on south of the building with several openings through windows.	20m west
CH657757_L6 318_BS3_F003 _100621	MA01	Middlewich Road, Minshull Vernon	SJ68416080	Barn	Common pipistrelle (1)	10 June 2021, re-entry survey	Occasional	Two storey small agricultural structure, possibly an old mill. Pitched roof with gable ends and a dormer facing east. Open ventilation features and open window on the northern aspect. Tiles were quite tight and there was bitumen felt lining between the tiles and rafters. Approximately 160 years old.	15m south-west
CH657757_L6 318_BS3_F001 _080721	MA01	Middlewich Road, Minshull Vernon	SJ68406079	Residential	Common pipistrelle (1)	8 July 2021, re-entry survey	Occasional	Red brick detached residential Victorian farmhouse, probably 18th century. The building has a pitched slate roof. Two chimneys are at the southern end. The out-house with the bat roosting features (also brick) is attached to the farmhouse and has a sloping roof with slate tiles.	25m south-west

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### **Roosting (woodlands)**

- 2.3.8 No woodlands were surveyed in the Hough to Walley's Green area (MA01) between January 2021 and July 2021.

### **Bat activity surveys**

- 2.3.9 No static or transect activity surveys were undertaken in the Hough to Walley's Green area (MA01) between January 2021 and July 2021.

### **Discussion of combined results**

#### **Bat assemblage**

- 2.3.10 No additional species to those reported in the main Ecological baseline data – bats (BID EC-011-00001), that accompanied the main ES, were recorded during surveys carried out between January 2021 and July 2021 in MA01. The new data does not change the assemblages described in the main ES. However, a common pipistrelle possible maternity roost, which is additional to the roosts reported in the main ES, was recorded.

#### **Roosts**

- 2.3.11 No new tree roosts were found within MA01.
- 2.3.12 A common pipistrelle possible maternity roost was recorded, with a peak of 20 bats, in a barn off Broughton Road, Coppenhall, that is 20m from the land required for the AP1 revised scheme.
- 2.3.13 Two occasional common pipistrelle roosts were recorded, one in a residential property and one in a barn off Middlewich Road, Minshull Vernon with the barn being 15m and the residential property being 25m from the land required for the AP1 revised scheme.

#### **Foraging habitat**

- 2.3.14 No activity surveys were undertaken in MA01 between January 2021 and July 2021. Consequently, there are no changes to the description of bat foraging habitat in MA01.

#### **Commuting habitat**

- 2.3.15 No activity surveys were undertaken in MA01 between January 2021 and July 2021. Consequently, there are no changes to the description of bat commuting habitat in MA01.

## **Wimboldsley to Lostock Gralam (MA02)**

### **Roosting (trees)**

- 2.3.16 A total of 152 trees in the Wimboldsley to Lostock Gralam area (MA02) were subject to an initial ground assessment between January 2021 and July 2021. Following these surveys:
- no bat roosts were confirmed;
  - 39 trees were assessed as having high potential to support roosting bats;
  - 60 trees were assessed as having moderate potential to support roosting bats; and
  - 53 trees were assessed as having low or negligible potential to support roosting bats. These trees were subsequently scoped out of further survey.
- 2.3.17 Of the trees previously surveyed from the ground between 2017 and 2020, 10 additional trees were subject to tree climbing inspection surveys, with the following results:
- one tree was a confirmed roost which was previously assessed as having high potential to support roosting bats;
  - two trees previously assessed as having high potential to support roosting bats were reclassified as having moderate potential;
  - five trees previously assessed as having moderate potential to support roosting bats were reclassified as having low potential; and
  - two trees previously assessed as having moderate potential to support roosting bats were reclassified as having negligible potential.
- 2.3.18 One roost was identified incidentally during other surveys. One unknown species of bat emerged from an oak tree in Clive Green Lane, Winsford.
- 2.3.19 Details of confirmed roosts within trees in the Wimboldsley to Lostock Gralam area (MA02) are provided in Table 2.

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**Table 2: Confirmed roosts within trees within MA02**

Survey code	CA	Location	OS grid reference	Tree species	Species confirmed to be using the roost (and peak count)	Date of peak count and nature of survey	Roost type	Roost description	Distance from the AP1 revised scheme (m) and orientation	Relevant to SES1 scheme (Y/N)	Relevant to AP1 revised scheme (Y/N)
CH561720-CH634300_L5 197_BT2_F00 6_230721	MA02	Linnards Lane, Wincham	SJ70257584	Ash	Natterer's bat (2)	23 July 2021, tree climbing inspection	Occasional	Knot hole, entrance approximately 5cm diameter. Hole goes up into branch limb within which roost is located.	Within	Y	Y

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### Roosting (buildings and structures)

- 2.3.20 A total of 28 buildings in the Wimboldsley to Lostock Gralam area (MA02) were subject to an external buildings and structures assessment between January 2021 and July 2021. Following these surveys:
- no bat roosts were confirmed in buildings or structures;
  - seven buildings and structures were assessed as having high potential to support roosting bats;
  - six buildings and structures were assessed as having moderate potential to support roosting bats; and
  - 15 buildings and structures were assessed as having low or negligible potential to support roosting bats. These buildings and structures were subsequently scoped out of further survey.
- 2.3.21 During the emergence/re-entry surveys in 2021, 13 roosts were identified in nine buildings that were assessed between 2017 and 2020 which are as follows:
- one building contained a confirmed roost that was previously confirmed as a roost; however, there is an increase in the number of species using the roost;
  - two buildings contained three confirmed roosts that were previously confirmed as roosts, but new species are utilising the buildings;
  - five confirmed roosts in four buildings that were previously assessed as having moderate potential to support roosting bats; and
  - four confirmed roosts in two buildings that were previously assessed as having low potential to support roosting bats.
- 2.3.22 No buildings required survey within 100m buffer from the land required for the AP1 revised scheme.
- 2.3.23 Details of confirmed roosts within buildings and structures in the Wimboldsley to Lostock Gralam area (MA02) are provided in Table 3.
- 2.3.24 Two roosts were identified incidentally during other surveys, as follows:
- six common pipistrelles re-entered a building roost on F048 in Northwich Road, Stanthorne (observed during a survey on F051); and
  - one common pipistrelle emerged from F001 (observed during a survey in Stanthorne Parks Mews, Clive Green Lane on building F002).

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**Table 3: Confirmed roosts within buildings and structures within MA02**

Survey code	CA	Location	OS grid reference	Building/ structure type	Species confirmed to be using the roost	Date of peak count and nature of survey	Roost type	Roost description	Distance from the AP1 revised scheme (m) and orientation
CH219500_L1 7642_BS3_F00 1_080721	MA02	Cookes Lane, Broken Cross	SJ69047326	Residential	Common pipistrelle (1)	8 July 2021, emergence survey	Occasional	A two storey, red brick, mid-20th century house, with extension added 10 years ago.	Within
CH281077_L1 7849_BS3_F00 1_080721	MA02	Cookes Lane, Broken Cross	SJ69057327	Residential	Common pipistrelle (1)	8 July 2021, re-entry survey	Occasional	House, likely to be less than 50 years old. Brickwork and hipped roof in good general condition.	Within
CH281077_L1 7849_BS3_F00 1_080721	MA02	Cookes Lane, Broken Cross	SJ69057327	Residential	<i>Myotis</i> sp. (1)	8 July 2021, re-entry survey	Occasional	House, likely to be less than 50 years old. Brickwork and hipped roof in good general condition.	Within
CH359470_L4 708_BS3_F023 _240621	MA02	Stanthorne Grange, Middlewich Road, Middlewich	SJ68466657	Residential	Noctule (3)	24 June 2021, re-entry survey	Occasional	A house, approximately 120 years old, with adjoining garage. Rendered external walls with some hanging tiles on south and northern aspect. The windows are metal frames in wood surrounds.	Within
CH359470_L4 708_BS3_F023 _240621	MA02	Stanthorne Grange, Middlewich Road, Middlewich	SJ68466657	Residential	Common pipistrelle (2)	24 June 2021, re-entry survey	Occasional	A house, approximately 120 years old, with adjoining garage. The house was rendered on external walls with some hanging tiles on south and northern aspect. The windows are metal frames in wood surrounds.	Within
CH566710- CH649605_L4	MA02	Whatcroft Hall Lane,	SJ68687036	Bridge	Brown long-eared (1)	2 June 2021, emergence	Occasional	A modern railway bridge (less 25 years old) over canal with	Within



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Survey code	CA	Location	OS grid reference	Building/structure type	Species confirmed to be using the roost	Date of peak count and nature of survey	Roost type	Roost description	Distance from the AP1 revised scheme (m) and orientation
935_BS3_F001_020621		Middlewich				survey		steel bridge deck, brick walls and concrete abutments.	
CH566710-CH649605_L4 935_BS3_F001_020621	MA02	Whatcroft Hall Lane, Middlewich	SJ68687036	Bridge	<i>Myotis</i> sp. (1)	2 June 2021, emergence survey	Occasional	A modern railway bridge (less 25 years old) over canal with steel bridge deck, brick walls and concrete abutments.	Within
CH566710-CH649605_L4 935_BS3_F001_020621	MA02	Whatcroft Hall Lane, Middlewich	SJ68687036	Bridge	Soprano pipistrelle (1)	2 June 2021, emergence survey	Occasional	A modern railway bridge (less 25 years old) over canal with steel bridge deck, brick walls and concrete abutments.	Within
CH657840_L1 5959_BS3_F00 2_130721	MA02	Stanthorne Parks Mews, Clive Green Lane	SJ68296478	Residential	Common pipistrelle (8)	13 July 2021, emergence survey	Occasional	Large house, possibly Victorian age. Very well maintained exterior with a few missing/lifted and cracked tiles on the roof. Lifted lead flashing in a few places.	10m west
CH333308-CH364381_L1 7041_BS3_F00 1_150621	MA02	Pear Tree Farm Cottages, Davenham Road, Northwich	SJ68607154	Garage	Soprano pipistrelle (3)	15 June 2021, emergence survey	Occasional	External garage to Cottage number 4, built in 1990. Garage with some small gaps around beams in the small loft void.	10m east
CH333308-CH369816_L1 7234_BS3_F00 1_250521	MA02	Pear Tree Farm Cottages, Davenham Road, Northwich	SJ68637154	Residential	Common pipistrelle (1)	25 May 2021, emergence survey	Occasional	Mid terrace cottage (redeveloped 1990) in overall good condition, no soffits.	15m south-east
CH333308-	MA02	Pear Tree Farm	SJ68617153	Residential	Brown long-	15 June 2021,	Possible	A two-storey cottage that was	20m east

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Survey code	CA	Location	OS grid reference	Building/ structure type	Species confirmed to be using the roost	Date of peak count and nature of survey	Roost type	Roost description	Distance from the AP1 revised scheme (m) and orientation
CH358470_L1 7767_BS3_F00 1_150621		Cottages, Davenham Road, Northwich			eared (10)	emergence survey	maternity	redeveloped in 1990. Brick-built with a pitched slate tiled roof. Some gaps noted at the top of the brick work.	
CH446766- CH614893_L5 405_BS3_F051 _020621	MA02	Northwich Road, Stanthorne	SJ68096741	Barn	Common pipistrelle (6)	2 June 2021, re-entry survey	Occasional	Large barn-like building of red brick with a slate roof and wooden window frames. The structure is pre 1900 but has been renovated, with old / new bricks visible. Airbricks are present.	55m north-west

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## Roosting (woodlands)

- 2.3.25 This section applies to all trees subject to the woodland survey methodology. One area of woodland comprising a single large woodland block was included in these surveys.
- 2.3.26 The woodland identified for survey, and the results of an initial ground-based assessment of trees and surrounding area, are summarised in Table 4. Trees with negligible potential for roosting bats were not recorded or mapped.

**Table 4: Potential roosting resource within woodlands in MA02**

Woodland	Number of trees with features of potential value to roosting bats			Overall suitability of woodland for bats*
	High suitability	Moderate suitability	Low suitability	
Rookery and Small Rookery Wood and Wimboldsley Wood	0	12	4	High – Large woodland with good connectivity with wider landscape and foraging habitat, located adjacent to the River Weaver, Shropshire Union Canal and Top Flash Lake.

*\*based on the quality and quantity of the roost and feeding resource and ecological position of the wood*

- 2.3.27 No transect or static detector survey was undertaken between January 2021 to July 2021.

## Bat activity surveys

- 2.3.28 Daubenton’s bat was the only new species recorded during the range of bat activity surveys conducted in MA02 between April 2021 and July 2021 compared to the previous results in the main ES.

**Table 5: Bat activity surveys conducted within MA02**

Ecology survey code	Transect location	Numbers of surveys conducted	First survey date	Final survey date	CA	Map reference
A10	A533 Bostock Road	1	12 July 2021	19 July 2021	MA02	EC-06-510
A12	Oak Wood, Bostock	1	12 July 2021	19 July 2021	MA02	EC-06-511
B4	Pennys Lane, Rudheath	2	26 April 2021	18 May 2021	MA02	EC-06-514
B8	A556 Shurlach Road	3	11 May 2021	19 July 2021	MA02	EC-06-515
B11	Linnards Lane, Plumley	1	22 June 2021	29 June 2021	MA02	EC-06-516a

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**Table 6: Summary of static detector monitoring results for A10**

Ecology survey code	Static location	OS grid reference	Description of habitats																
A10	A533 Bostock Road	SJ67956713	Edge of woodland, west of A533 Bostock Road, north of Winsford.																
Date (night monitoring commenced to night monitoring ceased)	Number of nights detector deployed	Species peak night count during monthly monitoring																	
		Pp	Ppy	Pn	P.sp	Mb	Md	Mn	Mm	Mbr	Mm/Mbr	M.sp	Pa	Bb	Nn	NI	Es	Ny/Es	
12 July 2021 – 19 July 2021	7	91	27	0	0	0	0	0	0	0	0	6	15	0	26	0	0	0	

*Pp* – common pipistrelle, *Ppy* – soprano pipistrelle, *Pn* – Nathusius' pipistrelle, *P.sp* – Pipistrelle species, *Mb* – Bechstein's bat, *Md* – Daubenton's bat, *Mn* – Natterer's bat, *Mm* – whiskered bat, *Mbr* – Brandt's bat, *Mm/Mbr* – whiskered/Brandt's bat, *M.sp* – Myotis species, *Pa* – brown long-eared bat, *Bb* – barbastelle, *Nn* – noctule, *NI* – Leisler's bat, *Es* – serotine, *Ny/Es* – *Nyctalus/Eptesicus* bat.

Cloud cover on a scale of 0 – 8, where: 0 = sky completely clear, 4 = sky half cloudy, 8 = sky completely cloudy.

Precipitation intensity on a scale of 0 – 5, where: 0 = dry, 1 = light drizzle, 2 = light rain, 3 = moderate rain, 4 = heavy rain, 5 = torrential rain.

Wind speed score of 0 – 12 against Beaufort scale, where: 0 = calm, 2 = light breeze, 4 = moderate breeze, 6 = strong breeze, 7 = high wind, 9 = strong gale, 12 = hurricane.

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- 2.3.29 Low to moderate levels of soprano pipistrelle activity were recorded at 27ppn. High levels of common pipistrelle, brown long-eared bats and noctule were recorded, with 91ppn, 15ppn and 26ppn respectively.

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 Ecological baseline data – bats

**Table 7: Summary of static detector monitoring results for A12**

Ecology survey code	Static location	OS grid reference	Description of habitats																
A12	Oak Wood, Bostock	SJ68326803	Edge of Bull's Wood, north of Winsford.																
Date (night monitoring commenced to night monitoring ceased)	Number of nights detector deployed	Species peak night count during monthly monitoring																	
		Pp	Ppy	Pn	P.sp	Mb	Md	Mn	Mm	Mbr	Mm/Mbr	M.sp	Pa	Bb	Nn	NI	Es	Ny/Es	
12 July 2021 – 19 July 2021	7	33	208	1	3	0	0	0	0	0	0	62	1	0	185	0	0	0	

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- 2.3.30 Low to moderate levels of common pipistrelle activity were recorded at 33ppn. High levels of soprano pipistrelle and *Myotis* species were recorded, at 208ppn and 62ppn respectively, and very high levels of noctule, at 185ppn.

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**Table 8: Summary of static detector monitoring results for B4**

Ecology survey code	Static location	OS grid reference	Description of habitats																
B4	Pennys Lane, Rudheath	SJ68877271	A line of hedgerow and trees located to the south of the B5082 (Pennys Lane).																
Date (night monitoring commenced to night monitoring ceased)	Number of nights detector deployed	Species peak night count during monthly monitoring																	
		Pp	Ppy	Pn	P.sp	Mb	Md	Mn	Mm	Mbr	Mm/Mbr	M.sp	Pa	Bb	Nn	NI	Es	Ny/Es	
26 April 2021 – 4 May 2021	8	144	6	0	0	0	1	0	0	0	0	0	61	1	0	13	0	0	0
11 May 2021 – 18 May 2021	7	400	97	0	1	0	0	0	0	0	0	0	27	2	0	4	0	0	0



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- 2.3.31 Moderate to high levels of soprano pipistrelle and noctule activity were recorded, with peak of 97ppn in May 2021 and 13ppn in April 2021. High levels of common pipistrelle activity were recorded in May 2021 with a peak of 400ppn. High levels of *Myotis* species were recorded in April 2021 with a peak of 61ppn.

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 Ecological baseline data – bats

**Table 9: Summary of static detector monitoring results for B8**

Ecology survey code	Static location	OS grid reference	Description of habitats																
B8	A556 Shurlach Road	SJ69707473	Scrub and broadleaved woodland habitat located west of the A556 Shurlach Road, at the edge of a residential estate.																
Date (night monitoring commenced to night monitoring ceased)	Number of nights detector deployed	Species peak night count during monthly monitoring																	
		Pp	Ppy	Pn	P.sp	Mb	Md	Mn	Mm	Mbr	Mm/Mbr	M.sp	Pa	Bb	Nn	NI	Es	Ny/Es	
11 May 2021 – 18 May 2021	7	289	1,390	0	1	0	0	0	0	0	0	0	9	0	0	3	0	0	0
22 June 2021 – 29 June 2021	7	201	100	0	5	0	0	0	0	0	0	7	2	0	97	0	0	0	2
12 July 2021 – 19 July 2021	7	831	155	1	1	0	0	0	0	0	0	13	0	0	151	0	0	0	3

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- 2.3.32 Very high levels of soprano pipistrelle and noctule activity were recorded, with peaks of 1,390ppn in May 2021 and 151ppn in July 2021 respectively. High levels of common pipistrelle were recorded in May 2021 with a peak of 831ppn. Moderate to high levels of whiskered/Brandt's were recorded in July 2021 with a peak of 3ppn.

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 Ecological baseline data – bats

**Table 10: Summary of static detector monitoring results for B11**

Ecology survey code	Static location	OS grid reference	Description of habitats																
B11	Linnards Lane, Plumley	SJ70337598	Edge of woodland adjacent to Smoker Brook, east of Northwich.																
Date (night monitoring commenced to night monitoring ceased)	Number of nights detector deployed	Species peak night count during monthly monitoring																	
		Pp	Ppy	Pn	P.sp	Mb	Md	Mn	Mm	Mbr	Mm/ Mbr	M.sp	Pa	Bb	Nn	NI	Es	Ny/ Es	
22 June 2021 – 29 June 2021	7	23	131	0	1	0	0	0	0	0	0	22	9	0	30	0	0	0	

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- 2.3.33 High levels of soprano pipistrelle and noctule activity were recorded with peaks of 131ppn and 30ppn respectively. Moderate to high levels of *Myotis* species were recorded with a peak of 22ppn.

## Discussion of combined results

### Bat assemblage

- 2.3.34 Compared to the main ES and Ecological baseline data – bats (BID EC-011-00001), surveys carried out between January 2021 and July 2021 in MA02 resulted in:
- one additional species, Daubenton's bat;
  - no changes to bat assemblages;
  - one possible maternity roost for brown-long-eared and occasional roosts of several species; and
  - an increase in foraging activity of noctule and pipistrelle bats at some locations.

### Roosts

- 2.3.35 One occasional roost of Natterer's bat was found in an Ash tree on Linnards Lane, Wincham, which is within land required for the construction of the AP1 revised scheme.
- 2.3.36 A total of 13 roosts were identified within nine buildings and structures in the area. A bridge on Whatcroft Hall Lane, Middlewich supports three roosts in one structure and is within land required for the AP1 revised scheme. Brown long-eared bat, *Myotis* species and soprano pipistrelle were recorded in this roost.
- 2.3.37 A brown long-eared possible maternity roost was recorded, with a peak of 10 bats, in a residential property in Pear Tree Farm Cottages, Davenham Road, Northwich, which is 20m from the land required for the construction of the AP1 revised scheme. Another two roosts were present in a residential property and garage on this property, one common pipistrelle and three soprano pipistrelles were found to be present.
- 2.3.38 A common pipistrelle occasional roost was recorded in a barn off Northwich Road, Stanthorne with a peak of six bats. The barn is located 55m from the land required for the AP1 revised scheme.
- 2.3.39 A noctule occasional roost with a peak of three bats was recorded in a residential property off Stanthorne Grange, Middlewich Road, Middlewich, within the land required for the AP1 revised scheme. A common pipistrelle occasional roost was also present within this property, with a peak of two bats.
- 2.3.40 Three roosts were recorded in a residential property off Cookes Lane, Broken Cross, with one *Myotis* species occasional roost and two occasional common pipistrelle roosts, which is within land required for the AP1 revised scheme.

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### Foraging habitat

- 2.3.41 The results of surveys carried out between April 2021 and July 2021 on the use of habitat in the Wimboldsley to Lostock Gralam area by foraging bats are broadly similar to those reported in the Ecological baseline data – bats (BID EC-011-00001) Background Information and Data, which accompanied the main ES. There were localised changes in foraging activity, particularly a notable increase in noctule in Bostock, Rudheath, A556 Shurlach Road and Plumley. There was also a large increase in soprano pipistrelle and common pipistrelle foraging in the Plumley area in May 2021 and July 2021.

### Commuting habitat

- 2.3.42 There were no changes in the commuting habitat, to that reported in the Ecological baseline data – bats (BID EC-011-00001) Background Information and Data, which accompanied the main ES.

## Pickmere to Agden and Hulseheath (MA03)

### Roosting (trees)

- 2.3.43 A total of 172 trees in the Pickmere to Agden and Hulseheath area (MA03) were subject to an initial ground assessment between January 2021 and July 2021. Following these surveys:
- no bat roosts were confirmed apart from two incidental reports;
  - 24 trees were assessed as having high potential to support roosting bats;
  - 95 trees were assessed as having moderate potential to support roosting bats; and
  - 53 trees were assessed as having low or negligible potential to support roosting bats. These trees were subsequently scoped out of further survey.
- 2.3.44 Of the trees previously surveyed from the ground between 2017 and 2020, 30 additional trees were subject to tree climbing inspection surveys with the following results:
- one tree previously assessed as having high potential to support roosting bats was reclassified as having low potential;
  - 27 trees previously assessed as having moderate potential to support roosting bats were reclassified as having ten high potential, eight low potential and nine negligible; and
  - two trees previously assessed as having low potential to support roosting bats were reclassified as having moderate potential.
- 2.3.45 Two roosts were identified incidentally during other surveys, as follows:
- one soprano pipistrelle was observed emerging from a willow tree in Daisy Bank Farm, Winterbottom Lane during a building emergence survey; and

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- one common pipistrelle emerged from a conifer tree in Pickmere Lane, Knutsford during a building emergence survey.

### Roosting (buildings and structures)

2.3.46 A total of 14 buildings in the Pickmere to Agden and Hulseheath area were subject to an external buildings and structures assessment between January 2021 and July 2021. Following these surveys:

- no bat roosts were confirmed in buildings or structures;
- no buildings or structures were assessed as having high potential to support roosting bats;
- eight buildings and structures were assessed as having moderate potential to support roosting bats; and
- six buildings and structures were assessed as having low or negligible potential to support roosting bats. These buildings and structures were subsequently scoped out of further survey.

2.3.47 During the emergence/re-entry surveys in 2021, 32 roosts were identified in 15 buildings that were assessed between 2017 and 2020, as follows:

- eight confirmed roosts in three buildings, including five with new species utilising the buildings and three roosts with increased numbers of bats;
- two confirmed roosts in two buildings that were previously confirmed as roosts; however, there is an increase in numbers of previously identified species using the roosts;
- three confirmed roosts in two buildings that were previously assessed as having roosts but now have new species utilising these buildings;
- two confirmed roosts in one building that was previously assessed as having a high potential to support roosting bats;
- 16 confirmed roosts in six buildings that were previously assessed as having a moderate potential to support roosting bats; and
- one confirmed roost in one building that was previously assessed as having low potential to support roosting bats.

2.3.48 Four roosts were identified incidentally during other surveys as follows:

- one soprano pipistrelle and five *Myotis* species emerged from F001 in Flittogate Farm (observed during a survey on F008);
- one brown long-eared bat re-entered a building roost in F007 in Flittogate Farm during a survey on F006;

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- 31 *Myotis* species and one soprano pipistrelle re-entered a building roost in a residential building on Pickmere Lane during a survey of an adjoining building; and
- two soprano pipistrelles re-entered a building roost in F003 in Broom Manor, Peacock Lane during a survey on F006.

2.3.49 Details of confirmed roosts within buildings and structures in the Pickmere to Agden and Hulseheath area are provided in Table 11 and Table 12.



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**Table 11: Confirmed roosts within buildings and structures within MA03**

Survey code	CA	Location	OS grid reference	Building/ structure type	Species confirmed to be using the roost	Date of peak count and nature of survey	Roost type	Roost description	Distance from the AP1 revised scheme (m) and orientation
CH129916-CH171520-CH251350_L17691_BS3_F001_020621	MA03	Pickmere Lane, Knutsford	SJ70727849	Residential	Soprano pipistrelle (1)	2 June 2021, emergence survey	Occasional	Two storey residential semi-detached building with a pitched roof in good condition. Gaps were noted along the wooden barge boards on the gable ends and some lifted tiles.	Within
CH129916-CH171520-CH251350_L17691_BS3_F001_080721	MA03	Pickmere Lane, Pickmere	SJ70737850	Residential	<i>Myotis</i> sp. (31)	8 July 2021, re-entry survey	Possible maternity	Two storey, semi-detached residential property with a tiled and pitched roof. Conservatory to the rear of the property.	Within
CH129916-CH171520-CH251350_L17691_BS3_F001_080721	MA03	Pickmere Lane, Pickmere	SJ70737850	Residential	Soprano pipistrelle (1)	8 July 2021, re-entry survey	Occasional	Two storey, semi-detached residential property with a tiled and pitched roof. Conservatory to the rear of the property.	Within
CH129916-CH171520-CH251350_L17691_BS3_F001_080721	MA03	Pickmere Lane, Knutsford	SJ70727849	Residential	<i>Myotis</i> sp. (10)	8 July 2021, re-entry survey	Possible maternity	Two storey residential semi-detached building with a pitched roof in good condition. Gaps were noted along the wooden barge boards on the gable ends and some lifted tiles.	Within
CH561651_L5128_BS3_F005_080621	MA03	Flittogate Farm, Flittogate	SJ70737819	Barn	Common pipistrelle (1)	8 June 2021, emergence survey	Occasional	A long, red brick barn with a pitched slated tiled roof. Multiple airbricks noted on the	Within

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Survey code	CA	Location	OS grid reference	Building/ structure type	Species confirmed to be using the roost	Date of peak count and nature of survey	Roost type	Roost description	Distance from the AP1 revised scheme (m) and orientation
		Lane, Plumley						north aspect of the building. Building is in good condition and the roof appears to have been recently replaced. Over 250 years old.	
CH561651_L5128_BS3_F004_100621	MA03	Flittogate Farm, Flittogate Lane, Plumley	SJ70727819	Barn	Soprano pipistrelle (1)	10 June 2021, re-entry survey	Occasional	A large, single story red brick barn with a slate tiled roof. Over 250 years old. A number of open windows and doors were identified, with gaps in the brickwork and mortar at the apexes of the building to allow access into the building.	Within
CH561651_L5128_BS3_F004_220721	MA03	Flittogate Farm, Flittogate Lane, Plumley	SJ70727819	Barn	<i>Myotis</i> sp. (6)	22 July 2021, emergence survey	Occasional	A large single story red brick barn with a slate tiled roof. Over 250 years old. A number of open windows and doors were identified, with gaps in the brickwork and mortar at the apexes of the building to allow access into the building.	Within
CH561651_L5128_BS3_F004_220721	MA03	Flittogate Farm, Flittogate Lane, Plumley	SJ70727819	Barn	Common pipistrelle (1)	22 July 2021, emergence survey	Occasional	A large single story red brick barn with a slate tiled roof. Over 250 years old. A number of open windows and doors were identified, with gaps in the brickwork and mortar at the apexes of the building to	Within

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Survey code	CA	Location	OS grid reference	Building/ structure type	Species confirmed to be using the roost	Date of peak count and nature of survey	Roost type	Roost description	Distance from the AP1 revised scheme (m) and orientation
								allow access into the building.	
CH561651_L5128_BS3_F002_200721	MA03	Flittogate Farm, Flittogate Lane, Plumley	SJ70697819	Barn	<i>Myotis</i> sp. (1)	20 July 2021, emergence survey	Occasional	A red brick single storey pitched slate roof tiled barn. Over 250 years old. Mortar heavily weathered with some bricks eroded. Gaps were noted under the ridge and pitched tiles, with gaps also noted above both doors. Large ivy growth on west edge.	Within
CH561651_L5128_BS3_F002_200721	MA03	Flittogate Farm, Flittogate Lane, Plumley	SJ70697819	Barn	<i>Pipistrelle</i> sp. (1)	20 July 2021, emergence survey	Occasional	A red brick single storey pitched slate roof tiled barn. Over 250 years old. Mortar heavily weathered with some bricks eroded. Gaps were noted under the ridge and pitched tiles, with gaps also noted above both doors. Large ivy growth on west edge.	Within
CH561651_L5128_BS3_F003_200721	MA03	Flittogate Farm, Flittogate Lane, Plumley	SJ70707819	Barn	<i>Myotis</i> sp. (1)	20 July 2021, emergence survey	Occasional	A large single story red brick barn with a slate tiled roof. Over 250 years old. A number of open windows and doors were identified, with gaps in the brickwork and mortar at the apexes of the building to allow access into the building.	Within
CH561651_L5128_	MA03	Flittogate	SJ70707819	Barn	Common	20 July 2021,	Occasional	A large single story red brick	Within

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Survey code	CA	Location	OS grid reference	Building/ structure type	Species confirmed to be using the roost	Date of peak count and nature of survey	Roost type	Roost description	Distance from the AP1 revised scheme (m) and orientation
BS3_F003_200721		Farm, Flittogate Lane, Plumley			pipistrelle (1)	emergence survey		barn with a slate tiled roof. Over 250 years old. A number of open windows and doors were identified, with gaps in the brickwork and mortar at the apexes of the building to allow access into the building.	
CH561651_L5128_BS3_F005_200721	MA03	Flittogate Farm, Flittogate Lane, Plumley	SJ70737819	Barn	<i>Myotis</i> sp. (1)	20 July 2021, re-entry survey	Occasional	A large single story red brick barn with a slate tiled roof. Over 250 years old. A number of open windows and doors were identified, with gaps in the brickwork and mortar at the apexes of the building to allow access into the building.	Within
CH561651_L5128_BS3_F005_200721	MA03	Flittogate Farm, Flittogate Lane, Plumley	SJ70737819	Barn	Brown long-eared (5)	20 July 2021, re-entry survey	Occasional	A large single story red brick barn with a slate tiled roof. Over 250 years old. A number of open windows and doors were identified, with gaps in the brickwork and mortar at the apexes of the building to allow access into the building.	Within
CH561651_L5128_BS3_F006_210721	MA03	Flittogate Farm, Flittogate Lane, Plumley	SJ70727817	Barn	Common pipistrelle (4)	21 July 2021, re-entry survey	Occasional	A single storey red brick building with a slate tiled pitched roof that was previously used as a milking shed. Air bricks present. Brickwork in poor condition	Within

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Survey code	CA	Location	OS grid reference	Building/ structure type	Species confirmed to be using the roost	Date of peak count and nature of survey	Roost type	Roost description	Distance from the AP1 revised scheme (m) and orientation
								with a number of holes through damage. Over 250 years old	
CH561651_L5128_BS3_F006_210721	MA03	Flittogate Farm, Flittogate Lane, Plumley	SJ70717818	Barn	Brown long-eared (1)	21 July 2021, re-entry survey	Occasional	A small red brick barn with a slate tiled roof in the middle of all other buildings in the farm complex. It has wooden doors and windows (with one broken panel). Mortar present and mostly sealed, aside from a notable gap in the apex.	Within
CH561651_L5128_BS3_F006_210721	MA03	Flittogate Farm, Flittogate Lane, Plumley	SJ70727817	Barn	Brown long-eared (1)	21 July 2021, re-entry survey	Occasional	A single storey red brick building with a slate tiled pitched roof that was previously used as a milking shed. Brickwork in poor condition with a number of holes through damage and air bricks being present. Approximately over 250 years old.	Within
CH561651_L5128_BS3_F006_210721	MA03	Flittogate Farm, Flittogate Lane, Plumley	SJ70727817	Barn	<i>Myotis</i> sp. (1)	21 July 2021, re-entry survey	Occasional	A single storey red brick building with a slate tiled pitched roof that was previously used as a milking shed. Brickwork in poor condition with a number of holes through damage and air bricks being present.	Within

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 Ecological baseline data – bats

Survey code	CA	Location	OS grid reference	Building/ structure type	Species confirmed to be using the roost	Date of peak count and nature of survey	Roost type	Roost description	Distance from the AP1 revised scheme (m) and orientation
								Approximately over 250 years old.	
CH561651_L5128_BS3_F008_210721	MA03	Flittogate Farm, Flittogate Lane, Plumley	SJ70707817	Barn	Soprano pipistrelle (7)	21 July 2021, emergence survey	Occasional	Two storey red brick barn with a pitched slate tiled roof, previously used as a milking shed, but now used for storage and a garage. Wooden doors and windows were noted with some open. The brick work was in poor condition with multiple gaps noted around the building.	Within
CH561651_L5128_BS3_F008_210721	MA03	Flittogate Farm, Flittogate Lane, Plumley	SJ70707817	Barn	Common pipistrelle (5)	21 July 2021, emergence survey	Occasional	Two storey red brick barn with a pitched slate tiled roof, previously used as a milking shed, but now used for storage and a garage. Wooden doors and windows were noted with some open. The brick work was in poor condition with multiple gaps noted around the building.	Within
CH561651_L5128_BS3_F008_210721	MA03	Flittogate Farm, Flittogate Lane, Plumley	SJ70707817	Barn	Brown long-eared (1)	21 July 2021, emergence survey	Occasional	Two storey red brick barn with a pitched slate tiled roof, previously used as a milking shed, but now used for storage and a garage. Wooden doors and windows were noted with some open. The brick work	Within

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 Ecological baseline data – bats

Survey code	CA	Location	OS grid reference	Building/ structure type	Species confirmed to be using the roost	Date of peak count and nature of survey	Roost type	Roost description	Distance from the AP1 revised scheme (m) and orientation
								was in poor condition with multiple gaps noted around the building.	
CH561651_L5128_BS3_F008_210721	MA03	Flittogate Farm, Flittogate Lane, Plumley	SJ70707817	Barn	<i>Myotis</i> sp. (4)	21 July 2021, emergence survey	Occasional	Two storey red brick barn with a pitched slate tiled roof, previously used as a milking shed, but now used for storage and a garage. Wooden doors and windows were noted with some open. The brick work was in poor condition with multiple gaps noted around the building.	Within
CH561651_L5128_BS3_F008_210721	MA03	Flittogate Farm, Flittogate Lane, Plumley	SJ70687818	Residential	Soprano pipistrelle (1)	21 July 2021, emergence survey	Occasional	Three storey, red brick residential structure, well maintained with recently repaired roofing. Approximately over 250 years old.	Within
CH561651_L5128_BS3_F008_210721	MA03	Flittogate Farm, Flittogate Lane, Plumley	SJ70687818	Residential	<i>Myotis</i> sp. (5)	21 July 2021, emergence survey	Occasional	Three storey, red brick residential structure, well maintained with recently repaired roofing. Approximately over 250 years old.	Within
CH517829_L6291_BS3_F004_150621	MA03	Winterbottom Farm, Winterbottom	SJ70978109	Residential	Common pipistrelle (4)	15 June 2021, emergence survey	Occasional	Two-storey farm house, brick-built with a pitched slate tiled roof. Possibly approximately	0m north

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Survey code	CA	Location	OS grid reference	Building/ structure type	Species confirmed to be using the roost	Date of peak count and nature of survey	Roost type	Roost description	Distance from the AP1 revised scheme (m) and orientation
		Lane						1800s. A number of slipped tiles and three air bricks noted on the south aspect.	
CH400937-U202535_L6244_B S3_F004_290721	MA03	Daisy Bank Farm, Winterbottom Lane, High Legh	SJ71208192	Residential	Soprano pipistrelle (19)	29 July 2021, emergence survey	Possible maternity	Two-storey farm house, brick-built with a pitched slate tiled roof. The building is in good general condition but has lifted roof tiles and gaps under the fascia boards.	10m west
CH400937-U202535_L6244_B S3_F004_290721	MA03	Daisy Bank Farm, Winterbottom Lane, High Legh	SJ71208192	Residential	Common pipistrelle (7)	29 July 2021, emergence survey	Occasional	Two-storey farm house, brick-built with a pitched slate tiled roof. The building is in good general condition but with lifted roof tiles and gaps under the fascia boards.	10m west
CH400937-U202535_L6244_B S3_F004_290721	MA03	Daisy Bank Farm, Winterbottom Lane, High Legh	SJ71208192	Residential	Brown long-eared (2)	29 July 2021, emergence survey	Occasional	Two-storey farm house, brick-built with a pitched slate tiled roof. The building is in good general condition but with lifted roof tiles and gaps under the fascia boards.	10m west
U203281_L8126_B S3_F002_220721	MA03	Middle Moss Farm, Agden Lane, High Legh	SJ71828488	Residential	Whiskered (2)	22 July 2021, re-entry survey (previous DNA test results identified)	Occasional	Two-storey, brick-built, Victorian era house, with single-storey rear extension. Pitched slate tiled roof with chimney at one end.	10m east



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 Ecological baseline data – bats

Survey code	CA	Location	OS grid reference	Building/ structure type	Species confirmed to be using the roost	Date of peak count and nature of survey	Roost type	Roost description	Distance from the AP1 revised scheme (m) and orientation
						whiskered)			
U203281_L8126_B S3_F002_220721	MA03	Middle Moss Farm, Agden Lane, High Legh	SJ71828488	Residential	Soprano pipistrelle (2)	22 July 2021, re-entry survey	Occasional	Two-storey, brick-built, Victorian era house, with single-storey rear extension. Pitched slate tiled roof with chimney at one end.	10m east
CH177427-CH548895_L4736_BS3_F003_080621	MA03	Broom Manor, Peacock Lane, High Legh	SJ72068400	Residential	Soprano pipistrelle (2)	8 June 2021, re-entry survey	Occasional	A two storey, house that is joined to another building to the east. Constructed of red brick with white render and clay tiles and ridge tiles. In addition, it has one chimney and air vents are present.	5m north-east

**Table 12: Confirmed roosts within buildings and structures beyond 100m buffer in MA03**

Survey code	CA	Location	OS grid reference	Building/ structure type	Species confirmed to be using the roost	Date of peak count and nature of survey	Roost type	Roost description	Distance from the AP1 revised scheme (m) and orientation
CH242138_L21019_BS3_F001_070721	MA03	Agden Hall, Agden Lane	SJ71538549	Residential	Common pipistrelle (1)	7 July 2021, re-entry survey	Occasional	Three-storey mansion of brick and render, approximately 80 years old. Mason stone around windows, with a pitched slate tiled roof.	345m north-west

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## Roosting (woodlands)

- 2.3.50 This section applies to all trees subject to the woodland survey methodology. One area of woodland was included in these surveys.
- 2.3.51 The woodland identified for survey, and the results of an initial ground-based assessment of trees and surrounding area, are summarised in Table 13. Trees with negligible potential for roosting bats were not recorded or mapped.

**Table 13: Potential roosting resource within woodlands in MA03**

Woodland	Number of trees with features of potential value to roosting bats			Overall suitability of woodland for bats*
	High suitability	Moderate suitability	Low suitability	
Belt Wood	8	39	22	High – Large woodland with connectivity along hedgerows and brooks.

*\*based on the quality and quantity of the roost and feeding resource and ecological position of the wood*

- 2.3.52 A transect and static detector survey was undertaken around the woodland, where access was available, to gain an understanding of the bat assemblage and levels of bat activity. The result of the survey is included in the bat activity surveys section.

## Bat activity surveys

- 2.3.53 Daubenton’s bat was the only new species recorded during the range of bat activity surveys conducted in MA03 between April 2021 and July 2021 compared to the previous results in the main ES.

**Table 14: Bat activity surveys conducted within MA03**

Ecology survey code	Transect location	Numbers of surveys conducted	First survey date	Final survey date	CA	Map reference
BT04	West of Knutsford	1	21 July 2021	21 July 2021	MA03	EC-06-517
B12	Milley Lane, Pickmere	2	22 June 2021	19 July 2021	MA03	EC-06-517
B13	Pickmere	1	17 May 2021	24 May 2021	MA03	EC-06-517
B15	Arley Brook, Pickmere	2	8 June 2021	12 July 2021	MA03	EC-06-518
B20	Mere CP	1	8 June 2021	15 June 2021	MA03	EC-06-520
B22	Mere CP	2	26 April 2021	15 June 2021	MA03	EC-06-520
B24	High Legh	1	7 June 2021	15 June 2021	MA03	EC-06-521
B27	High Legh	2	7 June 2021	12 July 2021	MA03	EC-06-522
B29	Agden CP	3	26 April 2021	14 June 2021	MA03	EC-06-523a

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**Table 15: Bat activity transect survey results for transect BT04**

Ecology survey code	Transect location				Description of habitats covered by transect																
BT04	West of Knutsford				Surrounding Pickmere Lane. The transect begins on a track off Milley Lane east of Pickmere, following the track and passing scattered trees until reaching Flittogate Lane. The transect passes Flittogate Farm through arable fields where it joins and follows treelines ending at the corner of Miley Lane.																
Visit number and date	Weather conditions				Total species passes during transect survey																
	Temp (oC)	Cloud (0-8)	Rain (0-5)	Wind (0-12)	Pp	Ppy	Pn	P.sp	Mb	Md	Mn	Mm	Mbr	Mm/Mbr	M.sp	Pa	Bb	Nn	NI	Es	Ny/Es
Visit 5: Dusk: 21 July 2021	22	4	0	1	11	29	0	6	0	0	0	0	0	0	40	2	0	17	0	0	0

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Ecological baseline data – bats

- 2.3.54 Low to moderate levels of common pipistrelle and soprano pipistrelle were recorded at 11ppn and 29ppn respectively. High levels of *Myotis* species and noctule were recorded at 40ppn and 17ppn respectively.

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 BID EC-011-00000 SES1 and AP1 ES  
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 Ecological baseline data – bats

**Table 16: Summary of static detector monitoring results for B12**

Ecology survey code	Static location	OS grid reference	Description of habitats																
B12	Milley Lane, Pickmere	SJ70527680	Within trees on the edge of a pond, south of Providence Farm, West Knutsford.																
Date (night monitoring commenced to night monitoring ceased)	Number of nights detector deployed	Species peak night count during monthly monitoring																	
		Pp	Ppy	Pn	P.sp	Mb	Md	Mn	Mm	Mbr	Mm/Mbr	M.sp	Pa	Bb	Nn	NI	Es	Ny/Es	
22 June 2021 – 29 June 2021	7	352	155	0	1	0	0	0	0	0	0	0	133	14	0	13	0	0	1
12 July 2021 – 19 July 2021	7	153	95	0	1	0	0	0	0	0	0	0	255	4	0	22	0	0	1

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Ecology and biodiversity  
BID EC-011-00000 SES1 and AP1 ES  
MA01, MA02 and MA03  
Ecological baseline data – bats

- 2.3.55 High levels of common pipistrelle and brown-long eared bat activity were recorded in June 2021, with peaks of 352ppn and 14ppn respectively. High levels of soprano pipistrelle, *Myotis* species and noctule were recorded in July 2021 with peaks of 153ppn, 255ppn and 22ppn respectively.

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Ecology and biodiversity  
 BID EC-011-00000 SES1 and AP1 ES  
 MA01, MA02 and MA03  
 Ecological baseline data – bats

**Table 17: Summary of static detector monitoring results for B13**

Ecology survey code	Static location	OS grid reference	Description of habitats																
B13	Pickmere	SJ70657767	Hedgerow adjacent to track, east of Roses Farm, west of Knutsford.																
Date (night monitoring commenced to night monitoring ceased)	Number of nights detector deployed	Species peak night count during monthly monitoring																	
		Pp	Ppy	Pn	P.sp	Mb	Md	Mn	Mm	Mbr	Mm/Mbr	M.sp	Pa	Bb	Nn	Nl	Es	Ny/Es	
17 May 2021 – 24 May 2021	7	33	82	0	0	0	0	0	0	0	0	27	7	0	5	0	0	0	

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BID EC-011-00000 SES1 and AP1 ES  
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Ecological baseline data – bats

- 2.3.56 High levels of *Myotis* species and brown long-eared bat were recorded at 27ppn and 7ppn respectively. Moderate to high levels were recorded for soprano pipistrelle and noctule at 82ppn and 5ppn respectively. Low to moderate levels were recorded for common pipistrelle at 33ppn.



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 Ecological baseline data – bats

**Table 18: Summary of static detector monitoring results for B15**

Ecology survey code	Static location	OS grid reference	Description of habitats																
B15	Arley Brook, Pickmere	SJ70727862	Treeline edge along southern bank of Arley Brook, west of Pickmere Lane, west of Knutsford.																
Date (night monitoring commenced to night monitoring ceased)	Number of nights detector deployed	Species peak night count during monthly monitoring																	
		Pp	Ppy	Pn	P.sp	Mb	Md	Mn	Mm	Mbr	Mm/Mbr	M.sp	Pa	Bb	Nn	NI	Es	Ny/Es	
8 June 2021 – 15 June 2021	7	19	326	0	0	0	0	0	0	0	0	70	2	0	24	0	0	0	
5 July 2021 – 12 July 2021	7	32	106	0	1	0	0	0	0	0	0	147	2	0	12	0	0	0	

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BID EC-011-00000 SES1 and AP1 ES  
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Ecological baseline data – bats

- 2.3.57 High levels of soprano pipistrelle and noctule were recorded in June 2021 with peaks of 326ppn and 24ppn respectively. High levels of common pipistrelle and *Myotis* species were recorded in July 2021 with peaks of 106ppn and 147ppn respectively.

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Ecology and biodiversity  
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 Ecological baseline data – bats

**Table 19: Summary of static detector monitoring results for B20**

Ecology survey code	Static location	OS grid reference	Description of habitats																
B20	Mere CP	SJ71128115	Hedgerow in corner of arable field, east of Winterbottom Farm, south of Lymm.																
Date (night monitoring commenced to night monitoring ceased)	Number of nights detector deployed	Species peak night count during monthly monitoring																	
		Pp	Ppy	Pn	P.sp	Mb	Md	Mn	Mm	Mbr	Mm/Mbr	M.sp	Pa	Bb	Nn	NI	Es	Ny/Es	
8 June 2021 – 15 June 2021	7	98	90	0	0	0	0	0	0	0	0	12	2	0	2	0	0	0	

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Ecology and biodiversity  
BID EC-011-00000 SES1 and AP1 ES  
MA01, MA02 and MA03  
Ecological baseline data – bats

- 2.3.58 Moderate to high levels of activity were recorded for common pipistrelle, soprano pipistrelle and *Myotis* species with peaks of 98ppn, 90ppn and 12ppn respectively.

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Ecology and biodiversity  
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 Ecological baseline data – bats

**Table 20: Summary of static detector monitoring results for B22**

Ecology survey code	Static location	OS grid reference										Description of habitats							
B22	Mere CP	SJ71368210										Hedgerow east of Goodiersgreen Farm, south of Lymm.							
Date (night monitoring commenced to night monitoring ceased)	Number of nights detector deployed	Species peak night count during monthly monitoring																	
		Pp	Ppy	Pn	P.sp	Mb	Md	Mn	Mm	Mbr	Mm/Mbr	M.sp	Pa	Bb	Nn	NI	Es	Ny/Es	
26 April 2021 – 4 May 2021	8	11	61	0	1	0	0	0	0	0	0	17	0	0	5	0	0	0	
8 June 2021 – 15 June 2021	7	647	156	3	5	0	0	0	0	0	0	13	1	0	5	0	0	0	

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Ecological baseline data – bats

- 2.3.59 High levels soprano pipistrelle and common pipistrelle activity were recorded in June 2021 with peaks of 156ppn and 647ppn respectively. Moderate to high levels of *Myotis* species were recorded in April with a peak of 17ppn. Moderate to high levels of noctule were recorded with peaks of 5ppn in both April 2021 and June 2021.

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 Ecological baseline data – bats

**Table 21: Summary of static detector monitoring results for B24**

Ecology survey code	Static location	OS grid reference	Description of habitats																
B24	High Legh	SJ71708372	Hedgerow adjacent to drain north of Wrenshot House, south of Lymm.																
Date (night monitoring commenced to night monitoring ceased)	Number of nights detector deployed	Species peak night count during monthly monitoring																	
		Pp	Ppy	Pn	P.sp	Mb	Md	Mn	Mm	Mbr	Mm/Mbr	M.sp	Pa	Bb	Nn	Nl	Es	Ny/Es	
7 June 2021 – 15 June 2021	8	78	76	37	8	0	0	0	0	0	0	25	6	0	5	0	0	0	

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- 2.3.60 High levels of *Nathusius pipistrelle* were recorded with a notable peak of 37ppn. Moderate to high levels of activity were recorded for common pipistrelle, soprano pipistrelle and *Myotis* species of 78ppn, 76ppn and 25ppn respectively. Low to moderate levels of noctule were recorded at 5ppn.



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 Ecological baseline data – bats

**Table 22: Summary of static detector monitoring results for B27**

Ecology survey code	Static location	OS grid reference	Description of habitats																
B27	High Legh	SJ71738496	Hedgerow immediately adjacent to Agden Lane, south of M56, east of Lymm.																
Date (night monitoring commenced to night monitoring ceased)	Number of nights detector deployed	Species peak night count during monthly monitoring																	
		Pp	Ppy	Pn	P.sp	Mb	Md	Mn	Mm	Mbr	Mm/Mbr	M.sp	Pa	Bb	Nn	NI	Es	Ny/Es	
7 June 2021 – 15 June 2021	8	880	33	4	9	0	0	0	0	0	0	7	1	0	2	0	0	0	
5 July 2021 – 12 July 2021	7	59	15	0	1	0	0	0	0	0	0	27	0	0	3	0	0	0	

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BID EC-011-00000 SES1 and AP1 ES  
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Ecological baseline data – bats

- 2.3.61 Very high levels of common pipistrelle activity were recorded in June 2021 with a peak of 880ppn. Moderate to high levels were recorded for soprano pipistrelle in June 2021, Nathusius pipistrelle in July 2021 and *Myotis* species in June 2021, with activity levels of 59ppn, 4ppn and 27ppn respectively. Low to moderate levels of noctule were recorded in July 2021 with a peak of 3ppn.

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 Ecological baseline data – bats

**Table 23: Summary of static detector monitoring results for B29**

Ecology survey code	Static location	OS grid reference										Description of habitats							
B29	Agden CP	SJ71508635										Grassland south of Hollybank House, east of Lymm.							
Date (night monitoring commenced to night monitoring ceased)	Number of nights detector deployed	Species peak night count during monthly monitoring																	
		Pp	Ppy	Pn	P.sp	Mb	Md	Mn	Mm	Mbr	Mm/Mbr	M.sp	Pa	Bb	Nn	NI	Es	Ny/Es	
26 April 2021 – 4 May 2021	8	175	145	0	1	0	1	0	0	0	0	1	1	0	1	0	0	0	
17 May 2021 – 24 May 2021	7	133	9	0	0	0	0	0	0	0	0	3	0	0	2	0	0	0	
7 June 2021 – 14 June 2021	7	53	20	9	3	0	0	0	0	0	0	4	0	0	5	0	0	0	

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Ecological baseline data – bats

- 2.3.62 High levels of common pipistrelle and soprano pipistrelle activity were recorded in April 2021 with peaks of 175ppn and 145ppn respectively. High levels of *Nathusius pipistrelle* were recorded in June 2021 with a peak of 9ppn. Moderate to high levels of *Myotis* species were recorded in June 2021 with a peak of 4ppn. Low to moderate levels of noctule were recorded in June 2021 with a peak of 5ppn.

## Discussion of combined results

### Bat assemblage

- 2.3.63 Compared to the main ES and Ecological baseline data – bats (BID EC-011-00001), surveys carried out between January 2021 and July 2021 in MA03 resulted in:
- one additional species, Daubenton's bat;
  - no changes to bat assemblages;
  - three additional possible maternity roosts: two *Myotis* species and one common pipistrelle; and
  - no apparent changes in activity.

### Roosts

- 2.3.64 Two new tree roosts were incidentally recorded in MA03 as a result of surveys on other trees or buildings. A total of 32 bat roosts were identified within 15 buildings and structures in the area.
- 2.3.65 A large number of roosts were confirmed across multiple buildings at Flittogate Farm, Flittogate Lane, Plumley. There were 20 occasional roosts in eight buildings within the land required for the AP1 revised scheme. Roosts of common pipistrelle, soprano pipistrelle, *Myotis* species and brown long-eared bats were recorded.
- 2.3.66 Two *Myotis* species possible maternity roosts were recorded separately in two residential properties off Pickmere Lane, Pickmere, and are within land required for the AP1 revised scheme. There were also two occasional soprano pipistrelle roosts in the same properties.
- 2.3.67 Another soprano pipistrelle possible maternity roost was identified in a house in Daisy Bank Farm, Winterbottom Lane, High Legh, which is located 10m from the land required for the AP1 revised scheme. There were also two occasional roosts, for common pipistrelle and brown long-eared bats in the same residential property.

### Foraging habitat

- 2.3.68 There is no apparent change in activity compared to the main ES. Relatively high levels of activity were recorded in habitat west of Knutsford, Pickmere and Lymm. This is in the area of Flittogate Farm where 20 roosts are present.

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**Commuting habitat**

- 2.3.69 There is no apparent change in activity compared to the main ES apart from a general increase in noctule abundance.

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Ecology and biodiversity  
BID EC-011-00000 SES1 and AP1 ES  
MA01, MA02 and MA03  
Ecological baseline data – bats

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