

High Speed Rail (Crewe – Manchester)

Background information and data

Ecology and biodiversity

BID EC-009-00001

Ecological baseline data -
breeding and wintering birds

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Department for Transport

High Speed Two (HS2) Limited has been tasked by the Department for Transport (DfT) with managing the delivery of a new national high speed rail network. It is a non-departmental public body wholly owned by the DfT.

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Contents

| | | |
|----------|---|------------|
| 1 | Introduction | 5 |
| 2 | Breeding birds | 6 |
| 2.1 | Methodology | 6 |
| 2.2 | Identification of species most relevant to the assessment | 17 |
| 2.3 | Deviations, constraints and limitations | 18 |
| 2.4 | Baseline | 22 |
| 3 | Wintering birds | 58 |
| 3.1 | Methodology | 58 |
| 3.2 | Identification of species most relevant to the assessment | 68 |
| 3.3 | Deviations, constraints and limitations | 69 |
| 3.4 | Baseline: wintering bird survey | 70 |
| 3.5 | Vantage point surveys | 95 |
| 4 | References | 106 |

Tables

| | | |
|-----------|--|----|
| Table 1: | Summary of general breeding bird surveys undertaken within MA01, MA02, MA03, MA04, MA05 and MA06 | 7 |
| Table 2: | Summary of breeding barn owl surveys undertaken within MA01, MA02, MA03, MA04, MA05 and MA06 | 12 |
| Table 3: | Summary of black redstart surveys undertaken within MA07 and MA08 | 15 |
| Table 4: | Summary of hobby surveys undertaken within MA01, MA02, MA04, MA05 and MA06 | 16 |
| Table 5: | Summary of kingfisher surveys undertaken within MA02, MA03, MA04, MA05 and MA06 | 17 |
| Table 6: | Summary of locations within MA01, MA02, MA03, MA04, MA05 and MA06 where requirement for general breeding bird survey was identified but no access was available. | 19 |
| Table 7: | Summary of locations within MA02, MA03, MA04, MA05 and MA06 where the requirement for Schedule 1 species survey was identified but access was not available for survey | 20 |
| Table 8: | Notable birds recorded during the surveys at Coppenhall Moss to Warmingham Moss (BB1_AT01) | 22 |
| Table 9: | Notable birds recorded during the surveys at Moss Lane to Park Hall Farm (BB1_AT02) | 24 |
| Table 10: | Notable birds recorded during the surveys at Wimboldsley Hall to | |

Background Information and Data

Ecology and biodiversity

BID EC-009-00001

Ecological baseline data – breeding and wintering birds

| | |
|---|----|
| Wimboldsey Grange (BB1_AT03) | 26 |
| Table 11: Notable birds recorded during the surveys at Wimboldsey to Stanthorne (BB1_AT04) | 28 |
| Table 12: Notable birds recorded during the surveys at Bostock House Farm to Pear Tree Farm Cottage (BB1_AT05) | 30 |
| Table 13: Notable birds recorded during the surveys at Winsford Industrial Estate to Bostock Hall (BB1_AT06) | 32 |
| Table 14: Notable birds recorded during the surveys at Marshall's Gorse to High House (BB1_BT01) | 33 |
| Table 15: Notable birds recorded during the surveys at Broken Cross to Lockstock Gralam (BB1_BT02a) | 35 |
| Table 16: Notable birds recorded during the surveys at Fieldhouse Farm to Pickmere (BB1_BT02b) | 36 |
| Table 17: Notable birds recorded during the surveys at B5391 Pickmere Lane to Litley Farm (BB1_BT03) | 38 |
| Table 18: Notable birds recorded during the surveys at Pownallgreen Farm to Park Farm (BB1_BT04) | 39 |
| Table 19: Notable birds recorded during the surveys at Park Farm to Agden Brow (BB1_BT05) | 40 |
| Table 20: Notable birds recorded during the surveys at Agden Brow to Bent Lane (BB1_DT01) | 42 |
| Table 21: Notable birds recorded during the surveys at Holcroft Moss to Hole Mill Farm (BB1_DT04) | 44 |
| Table 22: Notable birds recorded during the surveys at Pestfurlong to Culcheth (BB1_DT02) | 46 |
| Table 23: Notable birds recorded during the surveys at Golborne to Bamfurlong (BB1_DT03) | 48 |
| Table 24: Notable birds recorded during the surveys at Booth Bank to Newhall Farm (BB1_BT10) | 50 |
| Table 25: Notable species recorded during surveys at Cherry Tree Farm to Mobberley Road (BB1_BT09) | 52 |
| Table 26: Summary of wintering bird field surveys undertaken within MA01, MA02, MA03, MA04, MA05 and MA06 | 59 |
| Table 27: Summary of vantage point surveys undertaken within MA01, MA04, MA05 and MA06 | 65 |
| Table 28: Summary of the locations within MA01, MA02, MA03, MA04 and MA06 where requirement for wintering bird survey was identified but no access was available. | 69 |
| Table 29: Limitations to wintering bird surveys within MA01, MA02, MA03, MA04 and | |

Background Information and Data

Ecology and biodiversity

BID EC-009-00001

Ecological baseline data – breeding and wintering birds

| | |
|--|----|
| MA05 | 69 |
| Table 30: Notable wintering bird survey records from Coppenhall Moss to Warmingham Moss (WB1_AT01) | 70 |
| Table 31: Notable wintering bird survey records from Moss Lane to Park Hall Farm (WB1_AT02) | 71 |
| Table 32: Notable wintering bird survey records from Lane Ends to Forge Bank (WB1_AT11) | 72 |
| Table 33: Notable wintering bird survey records from Wimboldsley Hall to Wimboldsley Grange (WB1_AT03) | 73 |
| Table 34: Notable wintering bird survey records from Park Hall Farm to River Wheelock (WB1_AT10) | 74 |
| Table 35: Notable wintering bird survey records from Wimboldsley to Stanthorne (WB1_AT04) | 75 |
| Table 36: Notable wintering bird survey records from Greenheyes Farm to Davenham Road (WB1_AT05) | 76 |
| Table 37: Notable wintering bird survey records from Davenham Road to Cooke's Lane (WB1_BT01) | 77 |
| Table 38: Notable wintering bird survey records from Broken Cross to Fieldhouse Farm (WB1_BT02a) | 78 |
| Table 39: Notable wintering bird survey records from Fieldhouse Farm to Pickmere (WB1_BT02b) | 80 |
| Table 40: Notable wintering bird survey records from Tabley Grange to B5391 Pickmere Lane (WB1_BT08) | 81 |
| Table 41: Notable wintering bird survey records from B5391 Pickmere Lane to Litley Farm (WB1_BT03) | 82 |
| Table 42: Notable wintering bird survey records from Pownallgreen Farm to Hoo Green (WB1_BT04) | 83 |
| Table 43: Notable wintering bird survey records from Betley Hurst Farm to Chapel Lane (WB1_BT12) | 84 |
| Table 44: Notable wintering bird survey records from Park Farm to Agden Brow (WB1_BT05) | 85 |
| Table 45: Notable wintering bird survey records from Chapel Lane to Agden Bridge Farm (WB1_BT13) | 86 |
| Table 46: Notable wintering bird survey records from Agden Brow to Bent Lane (WB1_DT01) | 87 |
| Table 47: Notable wintering bird survey records South of Holcroft Moss (WB1_DT06) | 88 |
| Table 48: Notable wintering bird survey records from Pestfurlong to Culcheth (WB1_DT02) | 89 |
| Table 49: Notable wintering bird survey records from Golborne to Bamfurlong | |

Background Information and Data

Ecology and biodiversity

BID EC-009-00001

Ecological baseline data – breeding and wintering birds

| | |
|--|-----|
| (WB1_DT03) | 90 |
| Table 50: Notable wintering bird survey records from Windy Bank Farm to Lily Lane (WB1_DT07) | 90 |
| Table 51: Notable wintering bird survey records from Ryecroft Farm to Mobberly Road (WB1_BT06) | 92 |
| Table 52: Notable wintering bird survey records from Booth Bank to Newhall Farm (WB1_BT07) | 93 |
| Table 53: Target bird species recorded during wintering VP surveys at Warmingham Moss (VP2_AV02) | 95 |
| Table 54: Target bird species recorded during the wintering VP surveys at Manchester Ship Canal (VP1_DV05) | 97 |
| Table 55: Target bird species recorded during the wintering VP surveys at Coffin Lane culvert (VP1_DV01) | 98 |
| Table 56: Target bird species recorded during the wintering VP surveys at Leeds and Liverpool Canal (VP2_DV02) | 99 |
| Table 57: Target bird species recorded during the wintering VP surveys at Agden Brook Viaduct (VP1_BV05) | 102 |
| Table 58: Target bird species recorded during the wintering VP surveys west of Rostherne Mere (VP2_BV03) | 103 |
| Table 59: Target bird species recorded during the wintering VP surveys at Blackburn's Brook Viaduct (VP1_BV01) | 105 |

1 Introduction

- 1.1.1 This report presents a summary of the baseline data relating to breeding and wintering birds.
- 1.1.2 Baseline data have been collected for the Proposed Scheme in relation to the following community areas (CA):
- Hough to Walley's Green (MA01);
 - Wimboldsley to Lostock Gralam MA02);
 - Pickmere to Agden and Hulseheath (MA02);
 - Broomedge to Glazebrook (MA04);
 - Risley to Bamfurlong (MA05);
 - Hulseheath to Manchester Airport (MA06);
 - Davenport Green to Ardwick (MA07); and
 - Manchester Piccadilly Station (MA08).
- 1.1.3 This report should be read in conjunction with the Map Series EC-08 and EC-09 in the Background Information and Data, Ecology Map Book. Criteria for selection of species to be mapped are provided in Section 2.2.2 for breeding birds and Section 3.2.2 for wintering birds.
- 1.1.4 The Environmental Statement¹ should be referred to for details of the ecology impact assessment.

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

2 Breeding birds

2.1 Methodology

- 2.1.1 Details of the standard methodology utilised for breeding bird surveys are provided in Technical Note – Ecology and biodiversity – Ecological Field Survey Methods and Standards (FSMS) included in the Environmental Impact Assessment Scope and Methodology Report (SMR) (see Environmental Statement, Volume 5, Appendix CT-001-00001)².
- 2.1.2 The approach taken to sampling breeding birds was based on:
- desk study records relating to breeding birds for the area within 2km of the land required for the construction of the Proposed Scheme obtained from the county biological records centres (Staffordshire Ecological Record³, rECOrd⁴ (Local Biological Records Centre for the Cheshire region), GMLRC (Greater Manchester Local Record Centre⁵) and Merseyside Biobank⁶;
 - Local Biological Records Centre for the North Merseyside Region⁴;
 - records of breeding birds for the area within 2km of the land required for the construction of the Proposed Scheme included in the West Midlands Bird Club Annual Report 2018⁷, Greater Manchester Annual Bird Report 2011⁸ and Cheshire and Wirral Bird Report 2016⁹;
 - records of Schedule 1 birds from the Protected Species dataset provided by the National Trust;
 - records of Schedule 1 birds from the Vertebrate Species dataset provided by the Canal and River Trust;
 - records of Schedule 1 birds from the Nature Conservation and Ecology (NCE) Protected Species dataset provided by the Highways Agency;

² 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-phase-2b-crewe-manchester-environmental-statement>

³ Staffordshire Ecological Record, *The Ecological Database for Staffordshire*. Available online at: http://www.staffs-ecology.org.uk/html2015/index.php?title=Main_Page.

⁴ rECOrd, *Local Biological Records Centre serving Cheshire*. Available online at: <http://www.record-lrc.co.uk/>.

⁵ Greater Manchester Local Records Centre. Available online at: <https://www.gmwildlife.org.uk/>.

⁶ Merseyside Biobank. Available online at: <https://activenaturalist.org.uk/mbb/>.

⁷ West Midland Bird Club (2016), *The Birds of Staffordshire, Warwickshire, Worcestershire and the West Midlands 2018: West Midland Bird Report Annual Report*. Healeys Print Group, Ipswich.

⁸ Greater Manchester Bird Recording Group (2014), *Birds in Greater Manchester 2011*, GMBRG Manchester.

⁹ Cheshire and Wirral Ornithological Society (2016), *Cheshire and Wirral Bird Report 2016*, Swallowtail Print Ltd, Norwich.

Background Information and Data

Ecology and biodiversity

BID EC-009-00001

Ecological baseline data – breeding and wintering birds

- records of breeding barn owl from 2020 breeding season from Cheshire Barn Owl Group; and
- interpretation of aerial photography and data from Phase 1 Habitat Survey and scoping surveys to identify habitats that may be particularly suitable for breeding birds and nest sites for species subject to special protection (e.g. barn owl).

General breeding bird survey

2.1.3 Survey visits to each site were carried out between March and July 2018 and April and July 2019, depending on when access was granted. Visits to a site were undertaken at least one week apart and normally more than ten days apart as required by the methodology. Table 1 summarises the 18 sites where breeding bird surveys were undertaken in MA01 to MA06. These surveys were scoped out for MA07 and MA08 because suitable habitats are limited, and the route is primarily in tunnel. This information is cross-referenced to the accompanying Ecology Map Series EC-08. Ecology survey codes consist of transect reference numbers and visit numbers. For example, AT01A-E_BB1 refers to general breeding bird survey (BB1), transect AT01, visits 1-5.

Table 1: Summary of general breeding bird surveys undertaken within MA01, MA02, MA03, MA04, MA05 and MA06

| Ecology survey code | Survey site name | Location | Centroid OS grid reference | Habitat types included in survey | Survey date(s) | CA | Approximate distance from the land required for the construction of the Proposed Scheme (m) |
|---------------------|------------------------------------|---------------------------------------|----------------------------|---|--|------|---|
| BB1_AT01A-E | Coppenhall Moss to Warmingham Moss | Coppenhall Moss, Crewe, Cheshire | SJ69765879 | Grassland, arable land, marshy grassland, woodland, and hedgerows | 13 March 2018 10 April 2018 9 May 2018 7 June 2018 20 June 2018 | MA01 | Partly within |
| BB1_AT02A-E | Moss Lane to Park Hall Farm | Minshall Vernon, Middlewich, Cheshire | SJ68846047 | Grassland, arable land, ponds, woodlands, and hedgerows | 14 March 2018 11 April 2018 10 May 2018 8 June 2018 21 June 2018 | MA01 | Partly within |
| BB1_AT03A-E | Wimboldsley Hall to Wimboldsley | Wimboldsley, Cheshire | SJ68436276 | Mixed farmland, hedgerows, | 14 March 2018 12 April | MA01 | Partly within |

Background Information and Data

Ecology and biodiversity

BID EC-009-00001

Ecological baseline data – breeding and wintering birds

| Ecology survey code | Survey site name | Location | Centroid OS grid reference | Habitat types included in survey | Survey date(s) | CA | Approximate distance from the land required for the construction of the Proposed Scheme (m) |
|---------------------|--|----------------------------------|----------------------------|---|--|------|---|
| | Grange | | | woodland, stream | 2018 11 May 2018 8 June 2018 22 June 2018 | | |
| BB1_AT0 4A-E | Wimboldsley to Stanthorne | Winsford, Cheshire | SJ68396496 | Mixed farmland, woodlands, hedgerows and ponds | 20 March 2018 10 April 2018 10 May 2018 7 June 2018 21 June 2018 | MA02 | Partly within |
| BB1_AT0 5A-E | Bostock House Farm to Pear Tree Farm Cottage | Moulton, Cheshire | SJ68716925 | Mixed farmland, woodland, hedgerows, ponds, streams and lakes | 15 March 2018 11 April 2018 10 May 2018 5 June 2018 22 June 2018 | MA02 | Partly within |
| BB1_AT0 6A-E | Winsford Industrial Estate to Bostock Hall | Stanthorne, Middlewich, Cheshire | SJ67926769 | Grassland, arable land, woodland and streams | 21 March 2018 12 April 2018 11 May 2018 1 June 2018 11 July 2018 | MA02 | Partly within |
| BB1_BT0 1A-E | Marshall's Gorse to High House | Rudheath, Northwich, Cheshire | SJ68987211 | Mixed farmland, woodlands, hedgerows, stream and ponds | 27 March 2018 4 April 2018 24 April 2018 15 May 2018 6 June 2018 | MA02 | Partly within |
| BB1_BT0 | Broken Cross | Lostock | SJ69237379 | Lime beds, | 13 March | MA02 | Partly within |

Background Information and Data
 Ecology and biodiversity
 BID EC-009-00001
 Ecological baseline data – breeding and wintering birds

| Ecology survey code | Survey site name | Location | Centroid OS grid reference | Habitat types included in survey | Survey date(s) | CA | Approximate distance from the land required for the construction of the Proposed Scheme (m) |
|---------------------|------------------------------------|----------------------------|----------------------------|---|---|---------------|---|
| 2aA-E | to Fieldhouse Farm | Green, Northwich, Cheshire | | mixed farmland, hedgerows, stream and ponds | 2018 28 March 2018 6 April 2018 25 April 2018 15 May 2018 | | |
| BB1_BT0 2bA-E | Fieldhouse Farm to Pickmere | Lostock Gralam, Cheshire | SJ70057585 | Mixed farmland, woodland, hedgerows, stream and ponds | 13 March 2018 5 April 2018 26 April 2018 16 May 2018 6 June 2018 | MA02, MA03 | Partly within |
| BB1_BT0 3A-E | B5391 Pickmere Lane to Litley Farm | Knutsford, Cheshire | SJ70467936 | Mixed farmland, woodland, hedgerows, stream and ponds | 27 March 2018 15 April 2018 25 April 2018 18 May 2018 7 June 2018 | MA03 | Partly within |
| BB1_BT0 4A-E | Pownallgreen Farm to Park Farm | Mere, Knutsford, Cheshire | SJ71268139 | Mixed farmland, woodland, hedgerows, stream and ponds | 27 March 2018 4 April 2018 25 April 2018 18 May 2018 7 June 2018 | MA03 | Partly within |
| BB1_BT0 5A-E | Park Farm to Agden Brow | High Legh, Cheshire | SJ71638466 | Mixed farmland, woodland, hedgerows, ponds, golf course | 28 March 2018 11 April 2018 15 May 2018 25 May 2018 8 June 2018 | MA03 | Partly within |

Background Information and Data

Ecology and biodiversity

BID EC-009-00001

Ecological baseline data – breeding and wintering birds

| Ecology survey code | Survey site name | Location | Centroid OS grid reference | Habitat types included in survey | Survey date(s) | CA | Approximate distance from the land required for the construction of the Proposed Scheme (m) |
|---------------------|---------------------------------|----------------------------|----------------------------|---|---|------|---|
| BB1_DT0 1A-E | Agden Brow to Bent Lane | Agden, Warrington | SJ71098762 | Improved grassland, arable fields, hedgerows and ponds | 20 March 2018 24 April 2018 16 May 2018 18 June 2018 28 June 2018 | MA04 | Partly within |
| BB1_DT0 4A-E | Holcroft Moss to Hole Mill Farm | Glazebrook, Warrington | SJ68329338 | Woodland, grassland, arable fields, hedgerows, marshland and ponds | 22 March 2018 25 April 2018 17 May 2018 26 June 2018 6 July 2018 | MA05 | Partly within |
| BB1_DT0 2A-E | Pestfurlong to Culcheth | West of Culcheth, Cheshire | SJ65598114 | Improved grassland, arable fields, hedgerows, and ponds | 22 March 2018 24 April 2018 18 May 2018 15 June 2018 27 June 2018 | MA05 | Partly within |
| BB1_DT0 3A-E | Golborne to Bamfurlong | Stubshaw Cross, Wigan | SD6128000 5 | Woodland, grassland, plantation, arable fields, hedgerows, marshland, lakes and ponds | 21 March 2018 25 April 2018 17 May 2018 13 June 2018 29 June 2018 | MA05 | Partly within |
| BB1_BT1 0A-E | Booth bank to Newhall Farm | Millington | SJ73098479 | Mixed farmland, woodland, hedgerows | 30 April 2019 14 May 2019 | MA06 | Partly within |

Background Information and Data

Ecology and biodiversity

BID EC-009-00001

Ecological baseline data – breeding and wintering birds

| Ecology survey code | Survey site name | Location | Centroid OS grid reference | Habitat types included in survey | Survey date(s) | CA | Approximate distance from the land required for the construction of the Proposed Scheme (m) |
|---------------------|------------------------------------|-----------|----------------------------|---|---|------|---|
| | | | | and ponds | 29 May 2019 19 June 2019 3 July 2019 | | |
| BB1_BT0 9A-E | Cherry Tree Farm to Modderley Road | Rostherne | SJ75718433 | Mixed farmland, woodland, hedgerows, stream and ponds | 29 April 2019 17 May 2019 30 May 2019 11 June 2019 25 June 2019 | MA06 | Partly within |

Schedule 1 surveys

- 2.1.4 Species specific surveys were carried out for species listed on Schedule 1 of the Wildlife and Countryside Act 1981¹⁰ (as amended) where suitable habitats were present, or the desk study or scoping information indicated potential for these to be present. However, Schedule 1 species are not identified in the EC-08 maps due to sensitivity of rare breeding birds, unless the risk of public disturbance is deemed to be negligible.

Barn owl surveys

- 2.1.5 Single survey visits for breeding barn owl (*Tyto alba*) were undertaken between September and October 2018 and July and August 2019 for the 59 sites listed in Table 2.

¹⁰ *Wildlife and Countryside Act 1981 (England and Wales) (as amended)*, Chapter 69. Her Majesty's Stationery Office, London. Available online at: <https://www.legislation.gov.uk/ukpga/1981/69/part/II/crossheading/protection-of-birds>.

Background Information and Data
 Ecology and biodiversity
 BID EC-009-00001
 Ecological baseline data – breeding and wintering birds

Table 2: Summary of breeding barn owl surveys undertaken within MA01, MA02, MA03, MA04, MA05 and MA06

| Ecology survey code | Location | Potential nest site | Survey date | CA | Approximate distance from the land required for the construction of the Proposed Scheme (m) |
|---------------------|----------------------------------|--|------------------|------|---|
| L15042 | Crewe, Cheshire | Scoping identified potential, but no suitable nest features present. | 8 August 2019 | MA01 | Adjacent |
| L16018 | Coppenhall Moss, Crewe, Cheshire | Mature trees within and adjacent have potential sites. | 4 September 2018 | MA01 | 65m east |
| L15955 | Coppenhall Moss, Crewe, Cheshire | Previous barn owl nesting identified by desk study in 2018. | 4 September 2018 | MA01 | 110m south-east |
| L4122 | Crewe, Cheshire | Scoping identified potential, but no suitable nest features present. | 11 July 2019 | MA01 | Within |
| L16230 | Warmingham, Sandbach, Cheshire | Mature trees within have potential sites. | 4 September 2018 | MA01 | Within |
| L15589 | Warmingham, Sandbach, Cheshire | Potentially suitable features present. | 4 July 2019 | MA01 | 306m east |
| L5335 | Minshull Vernon, Cheshire | Potentially suitable features present. | 17 July 2019 | MA01 | Within |
| L6318 | Minshull Vernon, Cheshire | Trees in the land to east of the land-parcel with potential nest site. | 11 July 2019 | MA01 | Within |
| L3653 | Minshull Vernon, Cheshire | Potentially suitable features present. | 17 July 2019 | MA01 | Adjacent |
| L5409 | Wimboldsley, Cheshire | Potentially suitable features present. | 4 September 2018 | MA01 | Within |
| L5856 | Wimboldsley, Cheshire | Potentially suitable features present. | 4 September 2018 | MA02 | Within |
| L15591 | Wimboldsley, Cheshire | Scoping identified potential, but no suitable nest features present. | 8 August 2019 | MA02 | Within |
| L5394 | Wimboldsley, Cheshire | Barn owl box present on-site. | 5 September 2018 | MA02 | Within |
| L5257 | Wimboldsley, Cheshire | Potentially suitable features present. | 5 September 2018 | MA02 | Within |
| L8030 | Wimboldsley, Cheshire | Barn owl box present on-site. | 3 July 2019 | MA02 | 262m east |
| L15611 | Middlewich, Cheshire | Scoping identified potential, but no suitable nest features | 8 August 2019 | MA02 | Adjacent |

Background Information and Data
 Ecology and biodiversity
 BID EC-009-00001
 Ecological baseline data – breeding and wintering birds

| Ecology survey code | Location | Potential nest site | Survey date | CA | Approximate distance from the land required for the construction of the Proposed Scheme (m) |
|---------------------|--------------------------------------|--|------------------|------|---|
| | | present. | | | |
| L15883 | Winsford, Cheshire | Scoping identified potential, but no suitable nest features present. | 17 July 2019 | MA02 | Adjacent |
| L15808 | Winsford, Cheshire | Scoping identified potential, but no suitable nest features present. | 17 July 2019 | MA02 | Adjacent |
| L5255 | Stanthorne, Middlewich, Cheshire | Scoping identified potential, but no suitable nest features present. | 10 July 2019 | MA02 | Within |
| L5243 | Middlewich, Cheshire | Scoping identified potential, but no suitable nest features present. | 14 August 2019 | MA02 | Within |
| L5388 | Stanthorne, Middlewich, Cheshire | Mature trees and damaged barn owl box present on-site. | 5 September 2018 | MA02 | Within |
| L5395 | Byley, Middlewich, Cheshire | Barn owl box present on-site. | 10 July 2019 | MA02 | Adjacent |
| L5405 | Bostock, Middlewich, Cheshire | Potentially suitable features present. | 5 September 2019 | MA02 | Within |
| L5383 | Bostock, Middlewich, Cheshire | Barn owl box present on-site. | 5 September 2018 | MA02 | 474m east |
| L5497 (Now L5021) | Bostock, Middlewich, Cheshire | Potentially suitable features present. | 6 September 2018 | MA02 | Within |
| L8877 | Tabley Inferior, Knutsford, Cheshire | Scoping identified potential, but no suitable nest features present. | 18 July 2019 | MA02 | L8877 |
| L5424 | Rudheath, Northwich, Cheshire | Potentially suitable features present. | 10 October 2018 | MA03 | Within |
| L4863 | Rudheath, Northwich, Cheshire | Potentially suitable features present. | 10 October 2018 | MA03 | Within |
| L43004 | Tabley Inferior, Knutsford, Cheshire | Potentially suitable features present. | 18 July 2019 | MA03 | Within |
| L6032 | Tabley, Knutsford | Barn owl box present on-site. | 25 October 2018 | MA03 | Adjacent |

Background Information and Data
 Ecology and biodiversity
 BID EC-009-00001
 Ecological baseline data – breeding and wintering birds

| Ecology survey code | Location | Potential nest site | Survey date | CA | Approximate distance from the land required for the construction of the Proposed Scheme (m) |
|---------------------|-------------------------|--|-------------------|------|---|
| L5365 | High Legh, Cheshire | Scoping identified potential, but no suitable nest features present. | 18 July 2019 | MA03 | Within |
| L6256 | Millington, Cheshire | Mature trees within have potential sites. | 10 October 2018 | MA03 | Within |
| L5235 | High Legh, Cheshire | Scoping identified potential, but no suitable nest features present. | 18 July 2019 | MA03 | 26m west |
| L5470 | Millington, Cheshire | Mature trees within have potential sites. | 10 October 2018 | MA03 | Within |
| L5968 | Millington, Cheshire | Potentially suitable features present. | 10 October 2018 | MA03 | Within |
| L6248 | High Legh, Cheshire | Mature trees within have potential sites. | 10 October 2018 | MA03 | Adjacent |
| L6096 | Millington, Cheshire | Mature trees within have potential sites. | 10 October 2018 | MA03 | Within |
| L21096 | Millington, Cheshire | Potentially suitable features present. | 9 October 2018 | MA03 | 81m west |
| L21019 | Agden, Cheshire | Potentially suitable features present. | 9 October 2018 | MA03 | Within |
| L5897 | Lymm, Cheshire | Scoping identified potential, but no suitable nest features present. | 25 July 2019 | MA04 | Within |
| L5970 | Heatley, Lymm, Cheshire | Mature trees within have potential sites. | 13 September 2018 | MA04 | Within |
| L21077 | Rixton, Warrington | Scoping identified potential, but no suitable nest features present. | 24 July 2019 | MA04 | Within |
| L21210 | Rixton, Warrington | Potentially suitable features present. | 24 July 2019 | MA04 | Adjacent |
| L6707 | Glazebrook, Warrington | Scoping identified potential, but no suitable nest features present. | 31 July 2019 | MA04 | Adjacent |
| L21177 | Croft, Warrington | Barn owl box present on-site. | 12 September 2018 | MA05 | Within |
| L5938 | Croft, Warrington | Outbuildings provide potentially suitable features. | 12 September 2018 | MA05 | Within |
| L21401 | Culcheth, Warrington | Confirmed roost site in building. | 24 July 2019 | MA05 | Adjacent |
| L7253 | Lowton, Warrington | Scoping identified potential, but no suitable nest features present. | 31 July 2019 | MA05 | 350m west |

Background Information and Data
 Ecology and biodiversity
 BID EC-009-00001
 Ecological baseline data – breeding and wintering birds

| Ecology survey code | Location | Potential nest site | Survey date | CA | Approximate distance from the land required for the construction of the Proposed Scheme (m) |
|---------------------|----------------------|--|-------------------|------|---|
| L44459 | Lowton, Warrington | Barn owl box present on-site. | 29 August 2019 | MA05 | Adjacent |
| L5121 | Golborne, Warrington | Barn owl seen in tree hollow. | 11 September 2018 | MA05 | Within |
| L5256 | Golborne, Warrington | Barn owl box present on-site. | 11 September 2018 | MA05 | Within |
| L5825 | Golborne, Warrington | Barn owl box present on-site. | 11 September 2018 | MA05 | 260m west |
| L21083 | Lowton, Warrington | Scoping identified potential, but no suitable nest features present. | 1 August 2019 | MA05 | Within |
| L4610 | Golborne, Warrington | Potentially suitable features present. | 12 September 2018 | MA05 | Adjacent |
| L21181 | Abram, Wigan | Scoping identified potential, but no suitable nest features present. | 1 August 2019 | MA05 | 60m east |
| L4983 | Abram, Wigan | Scoping identified potential, but no suitable nest features present. | 1 August 2019 | MA05 | 110m east |
| L5767 | Heatley, Cheshire | Scoping identified potential, but no suitable nest features present. | 25 July 2019 | MA05 | 10m south |
| L5191 | Millington, Cheshire | Potentially suitable features present. | 9 October 2018 | MA06 | 83m north |
| L5218 | Ashley, Cheshire | Potentially suitable features present. | 9 October 2018 | MA06 | Within |

Black redstart surveys

2.1.6 Five survey visits were undertaken between April and June 2018 at the two sites identified as being suitable for black redstart (*Phoenicurus ochruros*), which are listed in Table 3.

Table 3: Summary of black redstart surveys undertaken within MA07 and MA08

| Ecology survey code | Location | Potential nest site | Survey date | CA | Approximate distance from the land required for the construction of the Proposed Scheme (m) |
|---------------------|---------------------|--|---|------|---|
| BB4 T2 | Ardwick, Manchester | Suitable urban mosaic habitat present. | 17 April 2018 8 May 2018 21 May 2018 1 June 2018 17 June 2018 | MA07 | Within |

Background Information and Data
 Ecology and biodiversity
 BID EC-009-00001
 Ecological baseline data – breeding and wintering birds

| Ecology survey code | Location | Potential nest site | Survey date | CA | Approximate distance from the land required for the construction of the Proposed Scheme (m) |
|---------------------|------------------------|--|---|------|---|
| BB4 T1 | Piccadilly, Manchester | Suitable urban mosaic habitat present. | 20 April 2018 3 May 2018 15 May 2018 30 May 2018 14 June 2018 | MA08 | Within |

Hobby surveys

2.1.7 Two survey visits, undertaken in August 2018 and in July and August 2019 for locations where suitable nesting habitat for hobby (*Falco subbuteo*) was identified during breeding bird surveys, are listed in Table 4. Surveys consisted of transects conducted following guidance set out in Hardey et al. (2013)¹¹.

Table 4: Summary of hobby surveys undertaken within MA01, MA02, MA04, MA05 and MA06

| Ecology survey code | Location | Potential nest site | Survey date | CA | Approximate distance from the land required for the construction of the Proposed Scheme (m) |
|---------------------|-------------------------------|-----------------------------|----------------------------------|------|---|
| BB1-Hobby_AT03 | Wimboldsley, Cheshire | Suitable woodland habitats. | 22 August 2018 29 August 2018 | MA01 | Partly within |
| BB1-Hobby_AT04 | Winsford, Cheshire | Suitable woodland habitats. | 7 August 2018 14 August 2018 | MA02 | Partly within |
| BB1-Hobby_AT05 | Bostock, Middlewich, Cheshire | Suitable woodland habitats. | 8 August 2018 15 August 2018 | MA02 | Partly within |
| BB1-Hobby_DT0 1 | Lymm, Warrington | Suitable woodland habitats. | 9 August 2018 16 August 2018 | MA04 | Partly within |
| BB1-Hobby_DT0 2 | Culcheth, Warrington | Suitable woodland habitats. | 9 August 2018 21 August 2018 | MA05 | Partly within |
| BB1-Hobby_DT0 3 | Stubshaw Cross, Wigan | Suitable woodland habitats. | 21 August 2018 | MA05 | Partly within |
| BB1- | Ashley, | Suitable woodland habitats. | 12 July 2019 | MA06 | Partly within |

¹¹ Hardey, J., Crick, H., Wernham, C., Riley, H., Etheridge, B. and Thompson, D. (2013). *Raptors: a field guide to survey and monitoring* (3rd Edition). The Stationery Office, Edinburgh.

Background Information and Data
 Ecology and biodiversity
 BID EC-009-00001
 Ecological baseline data – breeding and wintering birds

| Ecology survey code | Location | Potential nest site | Survey date | CA | Approximate distance from the land required for the construction of the Proposed Scheme (m) |
|---------------------|----------|---------------------|---------------|----|---|
| Hobby_BT11 | Cheshire | | 6 August 2019 | | |

Kingfisher surveys

2.1.8 Seven survey visits were undertaken between April and June 2018 and April and July 2019 along seven watercourses identified as having potential to be suitable for nesting kingfisher (*Alcedo atthis*) as a result of scoping surveys and assessment, as listed in Table 5.

Table 5: Summary of kingfisher surveys undertaken within MA02, MA03, MA04, MA05 and MA06

| Ecology survey code | Location | Potential nest site | Survey date(s) | CA | Approximate distance from the land required for the construction of the Proposed Scheme (m) |
|---------------------|-------------------------------|---|-------------------------------|------|---|
| BB5_AT01 | Wimboldsley, Cheshire | Suitable watercourse. habitats – Shropshire Union Canal. | 19 April 2018 5 June 2018 | MA02 | Partly within |
| BB5_AT02 | Bostock, Middlewich, Cheshire | Suitable watercourse habitats – River Dane. | 19 April 2018 27 June 2018 | MA02 | Partly within |
| BB5_BT02 | Plumley, Cheshire | Suitable watercourse habitats – Smoker Brook. | 24 April 2019 21 June 2019 | MA03 | Partly within |
| BB5_BT01 | Tabley, Cheshire | Suitable watercourse habitats – Waterless brook. | 24 April 2019 | MA03 | Partly within |
| BB5_DT02 | Trafford, Warrington | Suitable watercourse habitats – River Bollin. | 21 May 2019 05 July 2019 | MA04 | Partly within |
| BB5_DT01 | Ince-in-Makerfield, Wigan | Suitable watercourse habitats – Leeds-Liverpool Canal, Hey Brook. | 26 April 2018 28 June 2018 | MA05 | Adjacent |
| BB5_BT04 | Warburton Green, Cheshire | Suitable watercourse habitats – River Bollin. | 26 April 2019 31 July 2019 | MA06 | Partly within |

2.2 Identification of species most relevant to the assessment

2.2.1 Notable bird species are those which are listed on:

- Annex 1 of the Birds Directive¹⁰;
- Schedule 1 of the Wildlife and Countryside Act 1981 (as amended)¹⁰;

Background Information and Data

Ecology and biodiversity

BID EC-009-00001

Ecological baseline data – breeding and wintering birds

- Rare Breeding Birds Panel (RBBP) Species List¹²;
- Section 41 of the National Environment and Rural Communities Act 2006¹³ (species of principal importance);
- Cheshire Local Biodiversity Action Plan (LBAP)¹⁴;
- Birds of Conservation Concern¹⁵ (Red¹⁶ and Amber¹⁷ species);
- the West Midland Bird Club, Cheshire and Wirral Ornithological Society and Greater Manchester annual bird reports regional breeding status ('very rare', 'rare', 'scarce' or 'uncommon'); and/or
- county rare or scarce species listed in Table 7 of the Cheshire Wildlife Trust's selection criteria for sites of county biological importance (Giles et al., 2014¹⁸) or in Greater Manchester sites of biological importance selection guidelines¹⁹.

2.2.2 Records of notable species are summarised for each survey location. Species listed on Annex 1 of the Birds Directive¹⁰, the Rare Breeding Birds Panel Species List (2018)¹², those that are considered very rare, rare, scarce or uncommon in the relevant county, and any others that are used in site selection criteria on a county basis are identified in the accompanying Map Series EC-08. Schedule 1 breeding birds are not shown due to sensitivity, except where the risk of public disturbance is deemed to be negligible.

2.3 Deviations, constraints and limitations

2.3.1 No deviations to the standard methodology were applied, and subject to the constraints and limitations identified in the following section, all surveys were conducted as per the standard methodology provided in the Technical Note HS2 Ecological Surveys: FSMS included in the SMR.

¹² Rare Breeding Birds Panel (2018), *RBBP Species List*. Available online at: <https://www.rbbp.org.uk/rbbp-species-list-full.html>.

¹³ *Natural Environment and Rural Communities Act 2006*, Chapter 16. Her Majesty's Stationery Office, London. Available online at: <https://www.legislation.gov.uk/ukpga/2006/16/body/enacted>.

¹⁴ Cheshire Wildlife Trust, *Cheshire Biodiversity Action Plan*. Available online at: <http://www.cheshirewildlifetrust.org.uk/node/7348>.

¹⁵ Eaton, M.A et al. (2015), *Birds of Conservation Concern 4: the population status of birds in the United Kingdom, Channel Islands and the Isle of Man*, British Birds, 108, P708-746.

¹⁶ Red List criteria for breeding birds are those species which have experienced a severe decline of more than 50% of population and / or range over the last 25 years.

¹⁷ Amber List criteria for breeding birds are those species which have experienced a moderate decline of between 25% and 49% of population and/or range over the last 25 years.

¹⁸ Giles, R. (2014), Local Wildlife Site Selection Criteria for the Cheshire Region, Cheshire Wildlife Trust, Malpas.

¹⁹ Greater Manchester Ecology Unit (2016), Greater Manchester sites of biological importance selection guidelines, GMEU, Manchester.

Background Information and Data

Ecology and biodiversity

BID EC-009-00001

Ecological baseline data – breeding and wintering birds

- 2.3.2 Surveys undertaken were limited to locations where landowner permission was obtained and from public rights of way (PRoW) (except where access for survey was refused).
- 2.3.3 Survey access to a few sites was intermittent because of restrictions imposed by landowners. Consequently, the final survey visits for two transects (BB1_AT06 and BB1_DT04) were undertaken in July, after most young birds from first broods are likely to have fledged. These surveys were still carried out despite this limitation, as they will have recorded birds present and later breeding activity.
- 2.3.4 The FSMS states that surveys should have at least ten days between each visit. Scheduling constraints meant that three survey visits were undertaken less than 10 days from the previous visit: BB1_BT01, visit 2 (eight days), BB1_BT02, visit 3 (nine days) and BT04, visit 2 (eight days).
- 2.3.5 Land access was not available during the appropriate survey period for general breeding bird surveys at 18 locations that were selected as representative of suitable habitats for notable species and/or assemblages of breeding birds. These sites are listed in Table 6.

Table 6: Summary of locations within MA01, MA02, MA03, MA04, MA05 and MA06 where requirement for general breeding bird survey was identified but no access was available

| Survey site name | Location | Centroid OS grid reference | Habitat types | CA | Approximate distance from the land required for the construction of the Proposed Scheme (m) |
|----------------------------------|------------------|----------------------------|--|------------|---|
| AT01(L5373) (7 June 2018) | Coalpit Lane | SJ66036917 | Grassland, arable, scattered trees and hedgerow | MA01 | Adjacent |
| AT01 (L6049) (7 June 2018) | Coalpit Lane | SJ65576891 | Grassland, hedgerow | MA01 | Adjacent |
| AT01 (L5255) (7 June 2018) | Coalpit Lane | SJ65656926 | Grassland, arable, scattered trees and hedgerow, woodland, river. | MA01 | Adjacent |
| AT02 (L5228) (all visits) | Middlewich Road | SJ68836005 | Grassland, woodland | MA01 | Partly within |
| AT03 (L5108) (all visits) | Wimboldsley Hall | SJ67956250 | Grassland, woodland | MA01, MA02 | 10m west |
| AT03 (5366) (all visits) | Wimboldsley Hall | SJ67956250 | Buildings, grassland, scattered trees and hedgerows | MA01, MA02 | Partly within |
| No-transect (L6260) (all visits) | Weaver Bank | SJ67546211 | Mixed farmland, stream, scattered trees and hedgerows | MA01, MA02 | 70m west |
| No transect (L5476) (all visits) | Occlestone Green | SJ69436260 | Mixed farmland, buildings, hedgerows, scattered trees, stream and pond | MA01, MA02 | 130m east |
| AT03 (L5320) | Wimboldsley | SJ68796259 | Grassland, scattered | MA02 | Within |

Background Information and Data
Ecology and biodiversity
BID EC-009-00001
Ecological baseline data – breeding and wintering birds

| Survey site name | Location | Centroid OS grid reference | Habitat types | CA | Approximate distance from the land required for the construction of the Proposed Scheme (m) |
|---|------------------------------------|----------------------------|---|------|---|
| (all visits) | Hall | | trees and hedgerows | | |
| AT03 (L5334) (all visits) | Wimboldsley Hall | SJ67966332 | Buildings, grassland, scattered trees and hedgerows | MA02 | Within |
| AT03 (L5416) (all visits) | Wimboldsley Hall | SJ68626332 | Grassland, scattered trees and hedgerows | MA02 | Partly within |
| AT06 (L22112) (all visits) | Bostock Hall | SJ68096841 | Woodland and drain | MA02 | Adjacent |
| AT06 (L5410) (all visits) | Bostock | SJ67676739 | Grassland, scattered trees and hedgerows | MA02 | Partly within |
| AT06 (L5429) (all visits) | Bostock | SJ67966842 | Buildings, grassland, scattered trees and hedgerows | MA02 | Partly within |
| AT06 (L5474) (all visits) | Bostock | SJ68096782 | Woodland | MA02 | Adjacent |
| AT06 (L5346) (all visits) | Bostock | SJ67996688 | Grassland, scattered trees, woodland and hedgerows | MA02 | Partly within |
| AT06 (L5405) (all visits) | Bostock | SJ68386772 | Grassland, scattered trees and hedgerows | MA02 | Partly within |
| BT09: Access constraints, survey undertaken only from PRow (all visits) | Cherry Tree Farm to Mobberley Road | SJ75718433 | Mixed farmland, woodland, hedgerows, stream and ponds | MA06 | Partly within |

2.3.6 Land access was not available during the appropriate survey period at 35 locations identified as having potential to provide nest sites for kingfisher, barn owl or hobby. These sites are listed in Table 7.

Table 7: Summary of locations within MA02, MA03, MA04, MA05 and MA06 where the requirement for Schedule 1 species survey was identified but access was not available for survey

| Location | Species and potential nest site | CA | Approximate distance from the land required for the construction of the Proposed Scheme (m) |
|------------------------|---|------|---|
| Stanthorne (L4814) | Kingfisher (Shropshire Union Canal) | MA02 | Adjacent |
| Bostock (L5405) | Barn owl (trees with potential for nesting) | MA02 | Partly within |
| Bostock Green (L22109) | Kingfisher (River Dane) | MA02 | 445m west |
| Bostock Hall (L5474) | Kingfisher (River Dane) | MA02 | Adjacent |

Background Information and Data
 Ecology and biodiversity
 BID EC-009-00001
 Ecological baseline data – breeding and wintering birds

| Location | Species and potential nest site | CA | Approximate distance from the land required for the construction of the Proposed Scheme (m) |
|---|---|------------|---|
| Wimboldsley (L5404) | Kingfisher (River Dane) | MA02 | Adjacent |
| Whatcroft (L4926) | Kingfisher (Trent and Mersey Canal) | MA02 | Partly within |
| Bostock (L4946) | Kingfisher (Trent and Mersey Canal) | MA02 | Partly within |
| Whatcroft (L5372) | Kingfisher (Trent and Mersey Canal) | MA02 | Partly within |
| Whatcroft (L5238) | Kingfisher (Puddinglake Brook and Trent and Mersey Canal) | MA02 | Partly within |
| Whatcroft (L17920) | Kingfisher (Puddinglake Brook) | MA02 | Adjacent |
| Higginslane Farm (L5391) | Kingfisher (Gad Brook) | MA02 | Partly within |
| Rudheath (L4683) | Kingfisher (Trent and Mersey Canal) | MA02 | 170m west |
| Rudheath (L4831) | Kingfisher (Trent and Mersey Canal) | MA02 | 105m west |
| Rudheath (L5271) | Kingfisher (Trent and Mersey Canal) | MA02 | 200m west |
| Higher Wincham (L43004) | Kingfisher (Smoker Brook) | MA02, MA03 | Partly within |
| Higher Wincham (L8877) | Kingfisher (Smoker Brook) | MA02, MA03 | Partly within |
| Tabley (L5486, L5408, L9269) (1 survey) | Kingfisher (Tabley Brook) | MA03 | Partly within |
| Winterbottom (L5460) | Kingfisher (Arley Brook) | MA03 | Adjacent |
| Little Bollington (L6236) | Kingfisher (River Bollin) | MA03, MA04 | 30m north-east |
| Cadishead (L21109) | Kingfisher (Glaze Brook) | MA04 | 120m east |
| Heatley (L5374, L6075) | Kingfisher (River Bollin) | MA04 | Partly within |
| Heatley (L21111) | Kingfisher (River Bollin) | MA04 | 65m west |
| Cadishead (L21165) | Kingfisher (Glaze Brook) | MA04 | Adjacent |
| Partington (L5926) | Kingfisher (Red Brook) | MA04 | Adjacent |
| Partington (L6233) | Kingfisher (Red Brook) | MA04 | Partly within |
| Partington (L5887) | Kingfisher (Red Brook) | MA04 | Partly within |
| Partington (L5863) | Kingfisher (Red Brook) | MA04 | Partly within |
| Wash End (L21144) | Kingfisher (Carr Brook) | MA05 | 150m north-east |
| Wash End (L5303) | Kingfisher (Carr Brook) | MA05 | Partly within |
| Flittogate (L5079) | Kingfisher (Waterless Brook) | MA06 | 10m east |
| Davenport Green (L24000) | Kingfisher (Timperley Brook) | MA06 | Adjacent |
| Warburton Green | Kingfisher (River Bollin) | MA06 | 30m west |

Background Information and Data
 Ecology and biodiversity
 BID EC-009-00001
 Ecological baseline data – breeding and wintering birds

| Location | Species and potential nest site | CA | Approximate distance from the land required for the construction of the Proposed Scheme (m) |
|-------------------------|---------------------------------|------|---|
| (L43924) | | | |
| Davenport Green (L4481) | Kingfisher (Timperley Brook) | MA06 | Adjacent |
| Thorns Green (L5923) | Kingfisher (River Bollin) | MA06 | Within |
| Warburton Green (L6067) | Kingfisher (River Bollin) | MA06 | Adjacent |

2.3.7 Most kingfisher surveys carried out were partially limited by vegetation or safe access to the bankside restricting visibility of parts of the banks of watercourses.

2.4 Baseline

2.4.1 The survey sites are reported south to north through the CA below.

Hough to Walley's Green (MA01)

Coppenhall Moss to Warmingham Moss (BB1_AT01)

General breeding bird survey

2.4.2 Five survey visits were carried out at Coppenhall Moss to Warmingham Moss between 13 April and 20 June 2018. In total, 42 bird species were recorded, including 15 notable species. Breeding territories of 31 species were recorded, of which seven are notable.

2.4.3 Table 8 provides a summary of the estimated number of breeding territories for the notable species recorded.

Table 8: Notable birds recorded during the surveys at Coppenhall Moss to Warmingham Moss (BB1_AT01)

| Common name | Scientific name | Status | Estimated number of breeding territories | Number of survey visits during which the species were recorded (out of the total) |
|---------------|---------------------------|--|--|---|
| Bullfinch | <i>Pyrrhula pyrrhula</i> | Amber List, Species of Principal Importance, Cheshire LBAP | 2 | 2(5) |
| Dunnock | <i>Prunella modularis</i> | Amber List, Species of Principal Importance | 8 | 4(5) |
| House sparrow | <i>Passer domesticus</i> | Red List, Species of Principal | 7 | 5(5) |

Background Information and Data
 Ecology and biodiversity
 BID EC-009-00001
 Ecological baseline data – breeding and wintering birds

| Common name | Scientific name | Status | Estimated number of breeding territories | Number of survey visits during which the species were recorded (out of the total) |
|-------------|---------------------------|--|--|---|
| | | Importance, Cheshire LBAP | | |
| Lapwing | <i>Vanellus vanellus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 3 | 2(5) |
| Mallard | <i>Anas platyrhynchos</i> | Amber List | 2 | 3(5) |
| Song thrush | <i>Turdus philomelos</i> | Red List, Species of Principal Importance, Cheshire LBAP | 2 | 3(5) |
| Starling | <i>Sturnus vulgaris</i> | Red List, Species of Principal Importance, Cheshire LBAP | 1 | 3(5) |

2.4.4 In addition to the above records, the surveys identified possible breeding territories of teal.

2.4.5 The desk study returned records of: common crossbill, common sandpiper, corn bunting, cuckoo, curlew, garganey, goosander, lesser spotted woodpecker, little egret, little ringed plover, long-eared owl, merlin, peregrine, pochard, redstart, ringed plover, siskin, snipe, stonechat, teal, water rail, whinchat and woodcock within 2km of land required for the construction of the Proposed Scheme in the Coppenhall Moss to Warmingham Moss area since 2010. In addition, the desk study returned records of common crossbill, siskin, snipe, teal and woodcock within 2km of land required for the construction of the Proposed Scheme in the Crewe area, to the south of the Coppenhall Moss to Warmingham Moss area, since 2010.

Schedule 1 surveys

Barn owl surveys

2.4.6 A probable barn owl nest site was identified within the land required for the construction of the Proposed Scheme, near Coppenhall, during barn owl surveys on 4 September 2018. This consisted of two ash trees with suitable features for barn owl to nest and roost, with evidence of previous breeding activity at one of these trees. A further potential nest site was present in a tree 230m east of the land required for the construction of the Proposed Scheme. Cheshire Barn Owl Group provided three records for 2020 of breeding barn owl in the Coppenhall Moss to Warmingham Moss area, and four in the Crewe area. The nearest of these was located 75m south of the land required for the construction of the Proposed Scheme. The desk study returned 10 further records of barn owl, within 2km of land required for the construction of the Proposed Scheme in the Coppenhall Moss to Warmingham Moss area, and 12 within the Crewe area, since 2010. The nearest of these

Background Information and Data

Ecology and biodiversity

BID EC-009-00001

Ecological baseline data – breeding and wintering birds

records was within the land required for the construction of the Proposed Scheme. An incidental observation of a barn owl flying overhead was recorded to the north of Coppenhall Moss in June 2019, during other ecological surveys.

Hobby surveys

- 2.4.7 No hobby surveys were carried out in this section due to limited habitat suitability within and adjacent to the land required for the construction of the Proposed Scheme. The desk study returned seven records of hobby, within 2km of land required for the construction of the Proposed Scheme in the Coppenhall Moss to Warmingham Moss area, since 2010, and four records in the Crewe area. The nearest of these records was 505m north-east of the land required for the construction of the Proposed Scheme.

Kingfisher surveys

- 2.4.8 No kingfisher surveys were carried out in this section due to limited habitat suitability within and adjacent to the land required for the construction of the Proposed Scheme. Since 2010, within 2km of land required for the construction of the Proposed Scheme, there were five records of kingfisher in the Coppenhall Moss to Warmingham Moss area and nine records in the Crewe area. The nearest of these records was within the land required for the construction of the Proposed Scheme. An incidental observation of a kingfisher flying over Sandbach Flashes was recorded during other ecological surveys in October 2018.

Moss Lane to Park Hall Farm (BB1_AT02)

General breeding bird survey

- 2.4.9 Five survey visits were carried out in the Moss Lane to Park Hall Farm area between 14 March and 21 June 2018. In total, 46 bird species were recorded, including 19 notable species. Breeding territories of 30 species were recorded, of which 10 are notable.
- 2.4.10 Table 9 provides a summary of the estimated number of breeding territories for the notable species recorded.

Table 9: Notable birds recorded during the surveys at Moss Lane to Park Hall Farm (BB1_AT02)

| Common name | Scientific name | Status | Estimated number of breeding territories | Number of survey visits during which the species were recorded (out of the total) |
|---------------|---------------------------|--|--|---|
| Dunnoek | <i>Prunella modularis</i> | Amber List, Species of Principal Importance, Cheshire LBAP | 2 | 3(5) |
| House martin | <i>Delichon urbicum</i> | Amber List | 1 | 1(5) |
| House sparrow | <i>Passer domesticus</i> | Red List, Species of Principal Importance, | 4 | 4(5) |

Background Information and Data
 Ecology and biodiversity
 BID EC-009-00001
 Ecological baseline data – breeding and wintering birds

| Common name | Scientific name | Status | Estimated number of breeding territories | Number of survey visits during which the species were recorded (out of the total) |
|---------------|---------------------------|--|--|---|
| | | Cheshire LBAP | | |
| Lapwing | <i>Vanellus vanellus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 3 | 5(5) |
| Linnet | <i>Linaria cannabina</i> | Red List, Species of Principal Importance, Cheshire LBAP | 1 | 2(5) |
| Mallard | <i>Anas platyrhynchos</i> | Amber List | 2 | 5(5) |
| Mistle thrush | <i>Turdus viscivorus</i> | Red List | 1 | 1(5) |
| Song thrush | <i>Turdus philomelos</i> | Red List, Species of Principal Importance, Cheshire LBAP | 1 | 2(5) |
| Starling | <i>Sturnus vulgaris</i> | Red List, Species of Principal Importance, Cheshire LBAP | 1 | 3(5) |
| Stock dove | <i>Columba oenas</i> | Amber List | 1 | 2(5) |

2.4.11 In addition to the above records, the surveys identified possible breeding territories of tree sparrow.

2.4.12 The desk study returned records of common crossbill, curlew, lesser spotted woodpecker, little egret, little ringed plover, merlin, redstart, siskin, snipe, teal, water rail, willow tit and woodcock, within 2km of land required for the construction of the Proposed Scheme in the Moss Lane to Park Hall Farm area, since 2010.

Schedule 1 surveys

Barn owl surveys

2.4.13 A probable barn owl nest site was identified near Warmingham, 370m east of the land required for the construction of the Proposed Scheme, during barn owl surveys on 4 September 2018. This comprised trees with suitable features for barn owl to nest and roost, and evidence of previous breeding activity. Trees with potential nest sites were recorded near Walley's Green, 40m west of the land required for the construction of the Proposed Scheme, during surveys in 2019. Cheshire Barn Owl Group provided six records for 2020 of breeding barn owl, within 2km of land required for the construction of the Proposed Scheme in the Moss Lane to Park Hall Farm area. The nearest of these records was located 135m south-west of the land required for the construction of the Proposed Scheme. The desk study returned three further records of barn owl, within 2km of land required for the

Background Information and Data

Ecology and biodiversity

BID EC-009-00001

Ecological baseline data – breeding and wintering birds

construction of the Proposed Scheme in the Moss Lane to Park Hall Farm area, since 2010. The nearest of these records was within the land required for the construction of the Proposed Scheme.

Hobby surveys

- 2.4.14 No hobby surveys were carried out in this section due to limited habitat suitability within and adjacent to the land required for the construction of the Proposed Scheme. The desk study returned two records of hobby, within 2km of land required for the construction of the Proposed Scheme in the Moss Lane to Park Hall Farm area, since 2010. The nearest of these records was 1.1km south-east of the land required for the construction of the Proposed Scheme.

Kingfisher surveys

- 2.4.15 No kingfisher surveys were carried out in this section due to limited habitat suitability within and adjacent to the land required for the construction of the Proposed Scheme. The desk study returned one record of kingfisher, within 2km of land required for the construction of the Proposed Scheme in the Moss Lane to Park Hall Farm area, since 2010. This record was 1.1km south-east of the land required for the construction of the Proposed Scheme.

Wimboldsley to Lostock Gralam (MA02)

Wimboldsley Hall to Wimboldsley Grange (BB1_AT03)

General breeding bird survey

- 2.4.16 Five survey visits were carried out in the Wimboldsley Hall to Wimboldsley Grange area between 14 April and 22 June 2018. In total, 43 bird species were recorded, including 18 notable species. Breeding territories of 34 species were recorded, of which 10 are notable.
- 2.4.17 Table 10 provides a summary of the estimated number of breeding territories for the notable species recorded.

Table 10: Notable birds recorded during the surveys at Wimboldsley Hall to Wimboldsley Grange (BB1_AT03)

| Common name | Scientific name | Status | Estimated number of breeding territories | Number of survey visits during which the species were recorded (out of the total) |
|--------------|---------------------------|--|--|---|
| Corn bunting | <i>Emberiza calandra</i> | Red List, Species of Principal Importance, Cheshire LBAP | 2 | 1(5) |
| Dunnock | <i>Prunella modularis</i> | Amber List, Species of Principal Importance | 3 | 2(5) |

Background Information and Data
 Ecology and biodiversity
 BID EC-009-00001
 Ecological baseline data – breeding and wintering birds

| Common name | Scientific name | Status | Estimated number of breeding territories | Number of survey visits during which the species were recorded (out of the total) |
|---------------|---------------------------|--|--|---|
| House martin | <i>Delichon urbicum</i> | Amber List | 2 | 1(5) |
| House sparrow | <i>Passer domesticus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 3 | 5(5) |
| Lapwing | <i>Vanellus vanellus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 2 | 4(5) |
| Linnet | <i>Linaria cannabina</i> | Red List, Species of Principal Importance, Cheshire LBAP | 1 | 1(5) |
| Mallard | <i>Anas platyrhynchos</i> | Amber List | 3 | 4(5) |
| Mute swan | <i>Cygnus olor</i> | Amber List | 2 | 3(5) |
| Skylark | <i>Alauda arvensis</i> | Red List, Species of Principal Importance, Cheshire LBAP | 2 | 2(5) |
| Song thrush | <i>Turdus philomelos</i> | Red List, Species of Principal Importance, Cheshire LBAP | 2 | 2(5) |

2.4.18 The desk study returned no important²⁰ records of notable birds, within 2km of land required for the construction of the Proposed Scheme in the Wimboldsley Hall to Wimboldsley Grange area, since 2010.

Schedule 1 surveys

Hobby surveys

2.4.19 The presence of breeding hobby was confirmed by the presence of fledged young, recorded during hobby surveys in August 2018. These were calling from four locations close to a potential nest site previously identified during general breeding bird surveys, 190m west of the land required for the construction of the Proposed Scheme. There is very limited suitable habitat for hobby within the land required for the construction of the Proposed Scheme in this area. The desk study returned no records of hobby, within 2km of the land required for

²⁰ Selection of key desk study records was broadly based on country rare or scarce status or otherwise highly notable species, subject to professional judgement.

Background Information and Data
 Ecology and biodiversity
 BID EC-009-00001
 Ecological baseline data – breeding and wintering birds

the construction of the Proposed Scheme in the Wimboldsley Hall to Wimboldsley Grange area, since 2010.

Kingfisher surveys

2.4.20 Kingfisher surveys along the Shropshire Union Canal (Middlewich Branch) were carried out in 2018, reported below under Wimboldley to Yew Tree Farm (BB1_AT04). The desk study returned no records of kingfisher, within 2km of land required for the construction of the Proposed Scheme in the Wimboldsley Hall to Wimboldsley Grange area, since 2010.

Wimboldsley to Stanthorne (BB1_AT04)

General breeding bird survey

2.4.21 Five survey visits were carried out in the Wimboldsley to Stanthorne area between 20 March and 21 June 2018. In total, 52 bird species were recorded, including 27 notable species. Breeding territories of 39 species were recorded, of which eight are notable.

2.4.22 Table 11 provides a summary of the estimated number of breeding territories for the notable species recorded.

Table 11: Notable birds recorded during the surveys at Wimboldsley to Stanthorne (BB1_AT04)

| Common name | Scientific name | Status | Estimated number of breeding territories | Number of survey visits during which the species were recorded (out of the total) |
|---------------|---------------------------|--|--|---|
| Barn owl | <i>Tyto alba</i> | Schedule 1, Cheshire LBAP | 1 | 1(5) |
| Dunnock | <i>Prunella modularis</i> | Amber List, Species of Principal Importance | 3 | 5(5) |
| Grey wagtail | <i>Motacilla cinerea</i> | Red List | 1 | 3(5) |
| House sparrow | <i>Passer domesticus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 4 | 4(5) |
| Mallard | <i>Anas platyrhynchos</i> | Amber List | 3 | 5(5) |
| Mute swan | <i>Cygnus olor</i> | Amber List | 1 | 4(5) |
| Song thrush | <i>Turdus philomelos</i> | Red List, Species of Principal Importance, Cheshire LBAP | 1 | 5(5) |
| Tree sparrow | <i>Passer montanus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 1 | 2(5) |

Background Information and Data

Ecology and biodiversity

BID EC-009-00001

Ecological baseline data – breeding and wintering birds

- 2.4.23 In addition to the above records, the surveys identified a possible breeding territory of snipe and woodcock. The desk study returned records of snipe, within 2km of land required for the construction of the Proposed Scheme in the Wimboldsley to Stanthorne area, since 2010.

Schedule 1 surveys

Barn owl surveys

- 2.4.24 A potential barn owl nest site and a confirmed roost site were identified near Lea Hall during barn owl surveys in 2018 and 2019, within the land required for the construction of the Proposed Scheme. A confirmed roost site in a barn owl nest box was identified near Norcroft Farm, 325m east of the land required for the construction of the Proposed Scheme, during surveys in 2019. A barn owl was recorded flying from a nest box near Clive Green during breeding bird surveys in June 2018.
- 2.4.25 Cheshire Barn Owl Group provided three records of breeding barn owl for 2020, within 2km of the land required for the construction of the Proposed Scheme in the Wimboldsley to Stanthorne area. One record was within the land required for construction of the Proposed Scheme and one immediately adjacent to the west of it. There was no further desk study record of barn owl, within 2km of land required for the construction of the Proposed Scheme in the Wimboldsley to Stanthorne area, since 2010.

Hobby surveys

- 2.4.26 The presence of a pair of breeding hobby was confirmed 490m east of the land required for the construction of the Proposed Scheme in the Wimboldsley to Stanthorne area. This was recorded during surveys through observations of young calling from the nest on the first survey (7 August 2018), and adults and young calling on the second survey (14 August 2018). There was one desk study record of hobby, within 2km of land required for the construction of the Proposed Scheme in this area, since 2010. This record was 1.8km east of the land required for the construction of the Proposed Scheme.

Kingfisher surveys

- 2.4.27 Potential kingfisher nest sites were identified along the Shropshire Union Canal (Middlewich Branch) during kingfisher surveys. These were located near Wimboldsley Wood, adjacent to the land required for the construction of the Proposed Scheme, on 19 April 2018, and near Yew Tree Farm, 65m from the land required for the construction of the Proposed Scheme, on 7 June 2018. There were no records of kingfisher, within 2km of land required for the construction of the Proposed Scheme in the Wimboldsley to Stanthorne area, since 2010.

Bostock House Farm to Pear Tree Farm Cottage (BB1_AT05)

General breeding bird survey

- 2.4.28 Five survey visits were carried out in the Bostock House Farm to Pear Tree Farm Cottage area (BB1_AT05) between 15 March and 22 June 2018. In total, 63 bird species were recorded, including 27 notable species. Breeding territories of 52 species were recorded, of which nine are notable.
- 2.4.29 Table 12 provides a summary of the estimated number of breeding territories for the notable species recorded.

Table 12: Notable birds recorded during the surveys at Bostock House Farm to Pear Tree Farm Cottage (BB1_AT05)

| Common name | Scientific name | Status | Estimated number of breeding territories | Number of survey visits during which the species were recorded (out of the total) |
|---------------|-----------------------------|--|--|---|
| Bullfinch | <i>Pyrrhula pyrrhula</i> | Amber List, Species of Principal Importance, Cheshire LBAP | 1 | 2(5) |
| Dunnock | <i>Prunella modularis</i> | Amber List, Species of Principal Importance | 4 | 4(5) |
| Greylag goose | <i>Anser anser</i> | Schedule 1, Amber List | 1 | 3(5) |
| House sparrow | <i>Passer domesticus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 3 | 4(5) |
| Kingfisher | <i>Alcedo atthis</i> | Annex 1, Schedule 1, Amber List | 1 | 1(5) |
| Mallard | <i>Anas platyrhynchos</i> | Amber List | 10 | 5(5) |
| Mute swan | <i>Cygnus olor</i> | Amber List | 1 | 5(5) |
| Reed bunting | <i>Emberiza schoeniclus</i> | Amber List, Species of Principal Importance, Cheshire LBAP | 3 | 5(5) |
| Song thrush | <i>Turdus philomelos</i> | Red List, Species of Principal Importance, Cheshire LBAP | 6 | 5(5) |

- 2.4.30 In addition to the above records, the surveys identified a possible breeding territory of woodcock. A single peregrine was observed passing over but is unlikely to be breeding in the

Background Information and Data

Ecology and biodiversity

BID EC-009-00001

Ecological baseline data – breeding and wintering birds

vicinity. The desk study returned no important records of notable birds, except Schedule 1 species noted below, within 2km of land required for the construction of the Proposed Scheme in the Bostock House Farm to Pear Tree Farm Cottage area, since 2010.

Schedule 1 surveys

Barn owl surveys

- 2.4.31 Four potential barn owl nest sites and a confirmed roost site were identified near Dairy House Farm, the nearest being within the land required for the construction of the Proposed Scheme, during barn owl surveys on 5 September 2018. A barn owl roost and possible nest site was identified south of Brook House, 550m east of the land required for the construction of the Proposed Scheme, during barn owl surveys on 6 September 2018. Three trees were identified near Greenheys Farm in 2018, between 70 and 120m east of the land required for the construction of the Proposed Scheme, with potential as roost or nest sites and evidence to indicate roosting barn owl. A possible nest or roost site and an unoccupied barn owl box were recorded near Croxden Hall farm, 820m east of the land required for the construction of the Proposed Scheme, during surveys in 2019. Cheshire Barn Owl Group provided seven records of breeding barn owl for 2020, within 2km of the land required for the construction of the Proposed Scheme in the Bostock House Farm to Pear Tree Farm Cottage area. The nearest of these records was located 350m south-east of the land required for the construction of the Proposed Scheme.

Hobby surveys

- 2.4.32 Hobby were observed in flight and hunting during hobby surveys in the Bostock House Farm to Pear Tree Farm Cottage area on 8 August and 15 August 2018. However, no evidence of nesting was recorded. There were no records of hobby, within 2km of land required for the construction of the Proposed Scheme in the Bostock House Farm to Pear Tree Farm Cottage area, since 2010.

Kingfisher surveys

- 2.4.33 A kingfisher nest site was identified on the River Dane near Bull's Wood, within the land required for the construction of the Proposed Scheme, on 19 April 2018. A kingfisher was recorded flying along the Trent and Mersey Canal during breeding bird surveys in May 2018. Three incidental records of kingfisher were recorded during other ecological surveys, two along the canal and one at Puddinglake Brook. The desk study returned four records of kingfisher, within 2km of land required for the construction of the Proposed Scheme in the Bostock House Farm to Pear Tree Farm Cottage area, since 2010. The nearest of these records was adjacent to the west of the land required for the construction of the Proposed Scheme.

Winsford Industrial Estate to Bostock Hall (BB1_AT06)

General breeding bird survey

- 2.4.34 Five survey visits were carried out at Winsford Industrial Estate to Bostock Hall (BB1_AT06) between 21 March and 11 July 2018. In total, 54 bird species were recorded, including 24 notable species. Breeding territories of 45 species were recorded, of which six are notable.
- 2.4.35 Table 13 provides a summary of the estimated number of breeding territories for the notable species recorded.

Table 13: Notable birds recorded during the surveys at Winsford Industrial Estate to Bostock Hall (BB1_AT06)

| Common name | Scientific name | Status | Estimated number of breeding territories | Number of survey visits during which the species were recorded (out of the total) |
|----------------|---------------------------|--|--|---|
| Dunnock | <i>Prunella modularis</i> | Amber List, Species of Principal Importance | 2 | 3(5) |
| Grey partridge | <i>Perdix perdix</i> | Red List, Species of Principal Importance, Cheshire LBAP | 2 | 4(5) |
| Mallard | <i>Anas platyrhynchos</i> | Amber List | 4 | 5(5) |
| Mistle thrush | <i>Turdus viscivorus</i> | Red List | 4 | 1(5) |
| Song thrush | <i>Turdus philomelos</i> | Red List, Species of Principal Importance, Cheshire LBAP | 1 | 4(5) |
| Tawny owl | <i>Strix aluco</i> | Amber List | 1 | 2(5) |

- 2.4.36 In addition to the above records, the surveys identified possible breeding territories of teal and woodcock. Details of desk study data in this section of the route are covered under Bostock House Farm to Pear Tree Farm Cottage (BB1_AT05), above, as both transects cover land parallel to the same section of the route.

Schedule 1 surveys

Barn owl surveys

- 2.4.37 Details of barn owl surveys and desk study data in this section of the route are covered under Bostock House Farm to Pear Tree Farm Cottage (BB1_AT05), above, as both transects cover land parallel to the same section of the route.

Background Information and Data

Ecology and biodiversity

BID EC-009-00001

Ecological baseline data – breeding and wintering birds

Hobby surveys

- 2.4.38 Details of hobby surveys and desk study data in this section of the route are covered under Bostock House Farm to Pear Tree Farm Cottage (BB1_AT05), above, as both transects cover land parallel to the same section of the route.

Kingfisher surveys

- 2.4.39 Details of kingfisher surveys and desk study data in this section of the route are covered under Bostock House Farm to Pear Tree Farm Cottage (BB1_AT05), above, as both transects cover land parallel to the same section of the route.

Marshall's Gorse to High House (BB1_BT01)

General breeding bird surveys

- 2.4.40 Five survey visits were carried out in the Marshall's Gorse to High House area between 27 March and 5 June 2018. In total, 42 bird species were recorded, including 18 notable species. Breeding territories of 36 species were recorded, of which 11 are notable.
- 2.4.41 Table 14 provides a summary of the estimated number of breeding territories for the notable species recorded.

Table 14: Notable birds recorded during the surveys at Marshall's Gorse to High House (BB1_BT01)

| Common name | Scientific name | Status | Estimated number of breeding territories | Number of survey visits during which the species were recorded (out of the total) |
|---------------------|-----------------------------|--|--|---|
| Dunnock | <i>Prunella modularis</i> | Amber List, Species of Principal Importance | 6 | 5(5) |
| Grasshopper warbler | <i>Locustella naevia</i> | Red List, Species of Principal Importance | 1 | 1(5) |
| House sparrow | <i>Passer domesticus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 1 | 5(5) |
| Kestrel | <i>Falco tinnunculus</i> | Amber List | 1 | 2(5) |
| Lapwing | <i>Vanellus vanellus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 1 | 3(5) |
| Mallard | <i>Anas platyrhynchos</i> | Amber List | 1 | 3(5) |
| Meadow pipit | <i>Anthus pratensis</i> | Amber List | 2 | 1(5) |
| Reed bunting | <i>Emberiza schoeniclus</i> | Amber List, Species of Principal Importance, | 1 | 3(5) |

Background Information and Data

Ecology and biodiversity

BID EC-009-00001

Ecological baseline data – breeding and wintering birds

| Common name | Scientific name | Status | Estimated number of breeding territories | Number of survey visits during which the species were recorded (out of the total) |
|--------------|----------------------------|--|--|---|
| | | Cheshire LBAP | | |
| Snipe | <i>Gallinago gallinago</i> | Amber List | 2 | 2(5) |
| Song thrush | <i>Turdus philomelos</i> | Red List, Species of Principal Importance, Cheshire LBAP | 2 | 2(5) |
| Yellowhammer | <i>Emberiza citrinella</i> | Red List, Species of Principal Importance, Cheshire LBAP | 6 | 5(5) |

2.4.42 In addition to the above records, the surveys identified possible breeding territories of curlew. The desk study returned records of willow tit, within 2km of land required for the construction of the Proposed Scheme in the Marshall's Gorse to High House area, since 2010.

Schedule 1 surveys

Barn owl surveys

2.4.43 Two barn owl boxes were observed east of Higher Shurlach, within the land required for the construction of the Proposed Scheme, during barn owl surveys. One of these was confirmed as a roost site and possible nest site, with a male barn owl emerging from the box. Three buildings were also noted as providing potential roost sites, with one being confirmed by the presence of pellets and splash marks. Barn owls were also sighted on three occasions south of Higher Shurlach, during other ecological surveys in 2018. Cheshire Barn Owl Group provided two records of breeding barn owl for 2020 in the Marshall's Gorse to High House area, within 2km of the land required for the construction of the Proposed Scheme. The nearest of these records was located within the land required for the construction of the Proposed Scheme.

Kingfisher surveys

2.4.44 No kingfisher surveys were carried out in this section due to access restrictions. The desk study returned one record of kingfisher, within 2km of land required for the construction of the Proposed Scheme in the Marshall's Gorse to High House area, since 2010, approximately 1.3km to the west.

Broken Cross to Fieldhouse Farm (BB1_BT02a)

General breeding bird surveys

- 2.4.45 Five survey visits were carried out from Broken Cross to Fieldhouse Farm between 13 March and 18 May 2018. In total, 58 bird species were recorded, including 32 notable species. Breeding territories of 21 species were recorded, of which five are notable.
- 2.4.46 Table 15 provides a summary of the estimated number of breeding territories for the notable species recorded.

Table 15: Notable birds recorded during the surveys at Broken Cross to Lockstock Gramam (BB1_BT02a)

| Common name | Scientific name | Status | Estimated number of breeding territories | Number of survey visits during which the species were recorded (out of the total) |
|---------------|-----------------------------|--|--|---|
| Dunnock | <i>Prunella modularis</i> | Amber List, Species of Principal Importance | 3 | 4(5) |
| House sparrow | <i>Passer domesticus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 6 | 4(5) |
| Meadow pipit | <i>Anthus pratensis</i> | Amber List | 2 | 2(5) |
| Reed bunting | <i>Emberiza schoeniclus</i> | Amber List, Species of Principal Importance, Cheshire LBAP | 1 | 2(5) |
| Starling | <i>Sturnus vulgaris</i> | Red List, Species of Principal Importance, Cheshire LBAP | 3 | 2(5) |

- 2.4.47 In addition to the above records, the surveys identified possible breeding territories of curlew, dipper, redshank, and teal. The desk study returned records of common sandpiper, cuckoo, curlew, peregrine and snipe, within 2km of land required for the construction of the Proposed Scheme in the Broken Cross to Fieldhouse Farm area, since 2010.

Schedule 1 surveys

Barn owl surveys

- 2.4.48 No barn owl surveys were carried out in this section as no suitable features were identified during scoping. Cheshire Barn Owl Group provided one record of breeding barn owl for 2020 in the Broken Cross to Fieldhouse Farm area, within 2km of the land required for the construction of the Proposed Scheme. This record was located within the land required for the construction of the Proposed Scheme.

Kingfisher surveys

2.4.49 No kingfisher surveys were carried out in this section due to access restrictions. There was one desk study record of kingfisher, within 2km of land required for the construction of the Proposed Scheme in the Broken Cross to Fieldhouse Farm area, since 2010. The record was located 550m north-west of the land required for the construction of the Proposed Scheme.

Fieldhouse Farm to Pickmere (BB1_BT02b)

General breeding bird surveys

2.4.50 Five survey visits were carried out from Fieldhouse Farm to Pickmere between 15 March and 6 June 2018. In total, 44 bird species were recorded, including 20 notable species. Breeding territories of 35 species were recorded, of which nine are notable.

2.4.51 Table 16 provides a summary of the estimated number of breeding territories for the notable species recorded.

Table 16: Notable birds recorded during the surveys at Fieldhouse Farm to Pickmere (BB1_BT02b)

| Common name | Scientific name | Status | Estimated number of breeding territories | Number of survey visits during which the species were recorded (out of the total) |
|---------------|--------------------------------|--|--|---|
| Bullfinch | <i>Pyrhula pyrrhula</i> | Amber List, Species of Principal Importance, Cheshire LBAP | 1 | 2(5) |
| Dunnock | <i>Prunella modularis</i> | Amber List, Species of Principal Importance | 5 | 5(5) |
| House sparrow | <i>Passer domesticus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 2 | 2(5) |
| Lapwing | <i>Vanellus vanellus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 2 | 5(5) |
| Meadow pipit | <i>Anthus pratensis</i> | Amber List | 2 | 1(5) |
| Redstart | <i>Phoenicurus phoenicurus</i> | Amber List | 1 | 1(5) |
| Song thrush | <i>Turdus philomelos</i> | Red List, Species of Principal Importance, Cheshire LBAP | 2 | 5(5) |
| Starling | <i>Sturnus vulgaris</i> | Red List, Species of Principal Importance, | 2 | 2(5) |

Background Information and Data
 Ecology and biodiversity
 BID EC-009-00001
 Ecological baseline data – breeding and wintering birds

| Common name | Scientific name | Status | Estimated number of breeding territories | Number of survey visits during which the species were recorded (out of the total) |
|--------------|----------------------------|--|--|---|
| | | Cheshire LBAP | | |
| Yellowhammer | <i>Emberiza citronella</i> | Red List, Species of Principal Importance, Cheshire LBAP | 2 | 2(5) |

2.4.52 In addition to the above records, the surveys identified possible breeding territories of tree sparrow and snipe. The desk study returned records of cuckoo, within 2km of land required for the construction of the Proposed Scheme in the Fieldhouse Farm to Pickmere area, since 2010.

Schedule 1 surveys

Barn owl surveys

2.4.53 No barn owl surveys were carried out in this section as no suitable features were identified during scoping. There was one desk study record of barn owl, within 2km of land required for the construction of the Proposed Scheme in the Fieldhouse Farm to Pickmere area, since 2010. This record was 1.5km north-west of the land required for the construction of the Proposed Scheme.

Kingfisher surveys

2.4.54 Two kingfisher survey visits were carried out, in April and June 2019, during which two kingfisher were observed in suitable nesting habitat adjacent to the land required for the construction of the Proposed Scheme. However, no potential nests were recorded. There were no desk study data records, within 2km of the land required for the construction of the Proposed Scheme in the Fieldhouse Farm to Pickmere area, since 2010.

Pickmere to Agden and Hulseheath (MA03)

B5391 Pickmere Lane to Litley Farm (BB1_BT03)

General breeding bird surveys

2.4.55 Five survey visits were carried out from B5391 Pickmere Lane to Litley Farm between 27 March and 7 June 2018. In total, 40 bird species were recorded, including 17 notable species. Breeding territories of 34 species were recorded, of which 10 are notable.

2.4.56 Table 17 provides a summary of the estimated number of breeding territories for the notable species recorded.

Background Information and Data
 Ecology and biodiversity
 BID EC-009-00001
 Ecological baseline data – breeding and wintering birds

Table 17: Notable birds recorded during the surveys at B5391 Pickmere Lane to Litley Farm (BB1_BT03)

| Common name | Scientific name | Status | Estimated number of breeding territories | Number of survey visits during which the species were recorded (out of the total) |
|--------------|----------------------------|--|--|---|
| Dunnock | <i>Prunella modularis</i> | Amber List, Species of Principal Importance | 2 | 5(5) |
| Hobby | <i>Falco subbuteo</i> | Schedule 1, RBBP, Cheshire Scarce | 1 | 1(5) |
| House martin | <i>Delichon urbicum</i> | Amber List | 1 | 1(5) |
| Mallard | <i>Anas platyrhynchos</i> | Amber List | 2 | 2(5) |
| Meadow pipit | <i>Anthus pratensis</i> | Amber List | 1 | 3(5) |
| Skylark | <i>Alauda arvensis</i> | Red List, Species of Principal Importance, Cheshire LBAP | 5 | 5(5) |
| Song thrush | <i>Turdus philomelos</i> | Red List, Species of Principal Importance, Cheshire LBAP | 2 | 2(5) |
| Starling | <i>Sturnus vulgaris</i> | Red List, Species of Principal Importance, Cheshire LBAP | 1 | 1(5) |
| Tree sparrow | <i>Passer montanus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 1 | 4(5) |
| Yellowhammer | <i>Emberiza citrinella</i> | Red List, Species of Principal Importance, Cheshire LBAP | 4 | 5(5) |

2.4.57 In addition to the above records, the surveys identified a possible breeding territory of redstart. The desk study returned records of bittern and woodcock within 2km of land required for the construction of the Proposed Scheme in the B5391 Pickmere Lane to Litley Farm area since 2010.

Schedule 1 surveys

Barn owl surveys

2.4.58 A barn owl box, 30m north of land required for the construction of the Proposed Scheme, was inspected during barn owl surveys, but no evidence of occupation was recorded. Cheshire Barn Owl Group provided two records of breeding barn owl for 2020, within 2km of

Background Information and Data
 Ecology and biodiversity
 BID EC-009-00001
 Ecological baseline data – breeding and wintering birds

land required for the construction of the Proposed Scheme in the B5391 Pickmere Lane to Litley Farm area. The nearest of these records was 925m north-east of the land required for the construction of the Proposed Scheme.

Hobby surveys

- 2.4.59 Surveys carried out in 2018 identified a confirmed hobby nest site within this area, within 280m of the land required for the construction of the Proposed Scheme. The desk study returned no records of hobby within 2km of land required for the construction of the Proposed Scheme in the B5391 Pickmere Lane to Litley Farm area since 2010.

Kingfisher surveys

- 2.4.60 One kingfisher survey visit was carried out on Waterless Brook in April 2019. Two sightings of kingfisher were observed, and suitable nesting habitat was present within the land required for the construction of the Proposed Scheme. One incidental record of kingfisher was recorded on Arley Brook during other ecological surveys in 2018. The desk study returned two records of kingfisher within 2km of land required for the construction of the Proposed Scheme in the B5391 Pickmere Lane to Litley Farm area since 2010. The nearest of these records was 1km south of the land required for the construction of the Proposed Scheme.

Pownallgreen Farm to Park Farm (BB1_BT04)

General breeding bird survey

- 2.4.61 Five survey visits were carried out from Pownallgreen Farm to Park Farm between 27 March and 8 June 2018. In total, 41 bird species were recorded, including 15 notable species. Breeding territories of 11 species were recorded, of which two are notable.
- 2.4.62 Table 18 provides a summary of the estimated number of breeding territories for the notable species recorded.

Table 18: Notable birds recorded during the surveys at Pownallgreen Farm to Park Farm (BB1_BT04)

| Common name | Scientific name | Status | Estimated number of breeding territories | Number of survey visits during which the species were recorded (out of the total) |
|---------------|--------------------------|--|--|---|
| House sparrow | <i>Passer domesticus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 4 | 4(5) |
| Song thrush | <i>Turdus philomelos</i> | Red List, Species of Principal Importance, Cheshire LBAP | 2 | 3(5) |

- 2.4.63 In addition to the above records, the surveys identified possible breeding territories of marsh tit and yellow wagtail. The desk study returned no important records of notable birds

Background Information and Data
 Ecology and biodiversity
 BID EC-009-00001
 Ecological baseline data – breeding and wintering birds

within 2km of land required for the construction of the Proposed Scheme in the Pownallgreen Farm to Park Farm area since 2010.

Schedule 1 surveys

Barn owl surveys

- 2.4.64 No barn owl surveys were carried out in this area as no suitable features were identified during scoping. Three incidental observations of barn owl were recorded during other ecological surveys in 2018: one near Hoo Green; and two north of Winterbottom. Cheshire Barn Owl Group provided two records of breeding barn owl for 2020, within 2km of the land required for the construction of the Proposed Scheme in the Pownallgreen Farm to Park Farm area. The nearest of these records was located within the land required for the construction of the Proposed Scheme.

Park Farm to Agden Brow (BB1_BT05)

General breeding bird surveys

- 2.4.65 Five survey visits were carried out from Park Farm to Agden Brow between 28 March and 25 May 2018. In total, 44 bird species were recorded, including 15 notable species. Breeding territories of 23 species were recorded, of which eight are notable.
- 2.4.66 Table 19 provides a summary of the estimated number of breeding territories for the notable species recorded.

Table 19: Notable birds recorded during the surveys at Park Farm to Agden Brow (BB1_BT05)

| Common name | Scientific name | Status | Estimated number of breeding territories | Number of survey visits during which the species were recorded (out of the total) |
|---------------|---------------------------|--|--|---|
| Dunnock | <i>Prunella modularis</i> | Amber List, Species of Principal Importance | 2 | 4(5) |
| House sparrow | <i>Passer domesticus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 4 | 4(5) |
| Lapwing | <i>Vanellus vanellus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 8 | 4(5) |
| Mallard | <i>Anas platyrhynchos</i> | Amber List | 1 | 3(5) |
| Meadow pipit | <i>Anthus pratensis</i> | Amber List | 2 | 2(5) |
| Song thrush | <i>Turdus philomelos</i> | Red List, Species of Principal Importance, | 1 | 4(5) |

Background Information and Data

Ecology and biodiversity

BID EC-009-00001

Ecological baseline data – breeding and wintering birds

| Common name | Scientific name | Status | Estimated number of breeding territories | Number of survey visits during which the species were recorded (out of the total) |
|--------------|------------------------|---|--|---|
| | | Cheshire LBAP | | |
| Stock dove | <i>Columba oenas</i> | Amber List | 1 | 3(5) |
| Tree sparrow | <i>Passer montanus</i> | Royal Society for the Protection of Birds Red; NERC S41 | 3 | 3(5) |

2.4.67 In addition to the above records, the surveys identified possible breeding territories of corn bunting, grey partridge and yellow wagtail. The desk study returned records of lesser spotted woodpecker and willow tit within 2km of land required for the construction of the Proposed Scheme in the Park Farm to Agden Brow area since 2010.

Schedule 1 surveys

Barn owl surveys

2.4.68 A tawny owl box, which provides a potential nest site for barn owl, was recorded at Booth Bank, 95m east of the land required for the construction of the Proposed Scheme, but no evidence of occupation was observed. Cheshire Barn Owl Group provided one record of breeding barn owl for 2020 within 2km of the land required for the construction of the Proposed Scheme in the Park Farm to Agden Brow area. This record was located 2km west of the land required for the construction of the Proposed Scheme. The desk study returned one further record of barn owl within 2km of land required for the construction of the Proposed Scheme in the Park Farm to Agden Brow area since 2010. This record was 1.2km north-east of the land required for the construction of the Proposed Scheme.

Kingfisher surveys

2.4.69 No kingfisher surveys were carried out in this section due to limited suitable habitats within and adjacent to the land required for the construction of the Proposed Scheme. The desk study returned one record of kingfisher within 2km of land required for the construction of the Proposed Scheme in the Park Farm to Agden Brow area since 2010. This record was 1.1km north-east of the land required for the construction of the Proposed Scheme.

Broomedge to Glazebrook (MA04)

Agden Brow to Bent Lane (BB1_DT01)

General breeding bird survey

2.4.70 Five survey visits were carried out from Agden Brow to Bent Lane between 20 March and 28 June 2018. In total, 47 bird species were recorded, including 25 notable species. Breeding territories of 19 species were recorded, of which seven are notable.

Background Information and Data

Ecology and biodiversity

BID EC-009-00001

Ecological baseline data – breeding and wintering birds

2.4.71 Table 20 provides a summary of the estimated number of breeding territories for the notable species recorded.

Table 20: Notable birds recorded during the surveys at Agden Brow to Bent Lane (BB1_DT01)

| Common name | Scientific name | Status | Estimated number of breeding territories | Number of survey visits during which the species were recorded (out of the total) |
|---------------|----------------------------|--|--|---|
| House martin | <i>Delichon urbicum</i> | Amber list | 1 | 2(5) |
| House sparrow | <i>Passer domesticus</i> | Red list, Species of Principal Importance, Cheshire LBAP | 4 | 5(5) |
| Lapwing | <i>Vanellus vanellus</i> | Red list, Species of Principal Importance Cheshire LBAP | 3 | 5(5) |
| Mallard | <i>Anas platyrhynchos</i> | Amber list | 2 | 5(5) |
| Skylark | <i>Alauda arvensis</i> | Red list, Species of Principal Importance, Cheshire LBAP | 1 | 5(5) |
| Song thrush | <i>Turdus philomelos</i> | Red list, Species of Principal Importance, Cheshire LBAP | 1 | 4(5) |
| Yellowhammer | <i>Emberiza citrinella</i> | Red list, Species of Principal Importance, Cheshire LBAP | 5 | 5(5) |

2.4.72 In addition to the above records, the surveys identified a possible breeding territory of corn bunting. The desk study returned records of corn bunting, siskin and willow tit within 2km of land required for the construction of the Proposed Scheme in the Agden Brow to Bent Lane area since 2010.

Schedule 1 surveys

Barn owl surveys

2.4.73 Two tree-mounted barn owl nest boxes were noted between Heatley and Mossbrow during barn owl surveys, within the land required for the construction of the Proposed Scheme. Barn owl feathers were found under one of these trees. A tree roost was confirmed by a barn owl sighting in the same area near Lower Carr Green Farm during other ecological surveys in 2018. The desk study returned one record of barn owl within 2km of land required for the construction of the Proposed Scheme in the Agden Brow to Bent Lane area since 2010. This record was 1.3km north-east of the land required for the construction of the Proposed Scheme.

Hobby surveys

- 2.4.74 Two hobby surveys were carried out in the area of Lymm, Warrington in August 2018. One active hobby nest was recorded in this area, 75m west of the land required for the construction of the Proposed Scheme. The desk study returned no records of hobby within 2km of land required for the construction of the Proposed Scheme in the Agden Brow to Bent Lane area since 2010.

Kingfisher surveys

- 2.4.75 Two survey visits for kingfisher were carried out on the River Bollin in the Agden Brow to Bent Lane area in May and July 2019. Despite limited access to the banks, one kingfisher was observed during surveys adjacent to the land required for the construction of the Proposed Scheme. There was one desk study record of kingfisher within 2km of land required for the construction for the Proposed Scheme in the Agden Brow to Bent Lane area since 2010. This record was located 1.1km to the north-east of the land required for the construction for the Proposed Scheme.

Manchester Ship Canal

General breeding bird surveys

- 2.4.76 General breeding bird surveys were not carried out in the Manchester Ship Canal area due to limited access and because surveys in adjacent survey sections provide sufficient coverage to sample the habitats present.
- 2.4.77 The desk study returned records of corn bunting, cuckoo, curlew, goosander, kingfisher, little ringed plover, merlin, peregrine, siskin, snipe, stonechat, teal, whinchat and willow tit within 2km of land required for the construction of the Proposed Scheme in the Manchester Ship Canal area since 2010.

Schedule 1 surveys

Barn owl surveys

- 2.4.78 A confirmed barn owl roost site was identified at Hollingreave Farm, 25m from the land required for the construction of the Proposed Scheme, during surveys in 2019. The desk study returned 19 records of barn owl within 2km of land required for the construction of the Proposed Scheme in the Manchester Ship Canal area since 2010. The nearest of these records was 1.2km south-west of the land required for the construction of the Proposed Scheme.

Hobby and kingfisher surveys

- 2.4.79 No hobby or kingfisher surveys were carried out in this area due to access restrictions and limited suitable habitats within and adjacent to the land required for the construction of the

Background Information and Data

Ecology and biodiversity

BID EC-009-00001

Ecological baseline data – breeding and wintering birds

Proposed Scheme. One incidental observation of a kingfisher was recorded along the Manchester Ship Canal during other ecological surveys in 2019. The desk study returned two records of hobby and one record of kingfisher within 2km of land required for the construction of the Proposed Scheme in the Manchester Ship Canal area since 2010. The nearest hobby and kingfisher records were 1.2km south-west of the land required for the construction of the Proposed Scheme.

Risley to Bamfurlong (MA05)

Holcroft Moss to Hole Mill Farm (BB1_DT04)

General breeding bird survey

- 2.4.80 Five survey visits were carried out from the Holcroft Moss to Hole Mill Farm area between 22 March and 6 June 2018. In total, 47 bird species were recorded, including 23 notable species. Breeding territories of 29 species were recorded, of which 13 are notable
- 2.4.81 Table 21 provides a summary of the estimated number of breeding territories for the notable species recorded.

Table 21: Notable birds recorded during the surveys at Holcroft Moss to Hole Mill Farm (BB1_DT04)

| Common name | Scientific name | Status | Estimated number of breeding territories | Number of survey visits during which the species were recorded (out of the total) |
|---------------|---------------------------|---|--|---|
| Bullfinch | <i>Pyrrhula pyrrhula</i> | Amber List, Species of Principal Importance, Cheshire BAP | 1 | 1(5) |
| Curlew | <i>Numenius arquata</i> | Red List, Species of Principal Importance | 1 | 1(5) |
| Dunnock | <i>Prunella modularis</i> | Amber List, Species of Principal Importance | 3 | 3(5) |
| Lapwing | <i>Vanellus vanellus</i> | Red List, Species of Principal Importance, Cheshire BAP | 2 | 4(5) |
| Linnet | <i>Linaria cannabina</i> | Red List, Species of Principal Importance, Cheshire BAP | 1 | 2(5) |
| Mallard | <i>Anas platyrhynchos</i> | Amber list | 1 | 5(5) |
| Meadow pipit | <i>Anthus pratensis</i> | Amber list | 2 | 2(5) |
| Mistle thrush | <i>Turdus viscivorus</i> | Red list | 2 | 2(5) |
| Oystercatcher | <i>Haematopus</i> | Amber list | 1 | 2(5) |

Background Information and Data

Ecology and biodiversity

BID EC-009-00001

Ecological baseline data – breeding and wintering birds

| Common name | Scientific name | Status | Estimated number of breeding territories | Number of survey visits during which the species were recorded (out of the total) |
|----------------|-------------------------------|---|--|---|
| | <i>ostralegus</i> | | | |
| Reed bunting | <i>Emberiza schoeniclus</i> | Amber List, Species of Principal Importance, Cheshire BAP | 2 | 2(5) |
| Skylark | <i>Alauda arvensis</i> | Red List, Species of Principal Importance, Cheshire BAP | 4 | 4(5) |
| Song thrush | <i>Turdus philomelos</i> | Amber List, Species of Principal Importance, Cheshire BAP | 3 | 4(5) |
| Willow warbler | <i>Phylloscopus trochilus</i> | Amber list | 4 | 4(5) |

2.4.82 In addition to the above records, the surveys identified possible breeding territories of curlew, snipe and wood warbler. The desk study returned records of bittern, black-necked grebe, common crossbill, common sandpiper, corn bunting, cuckoo, curlew, goosander, goshawk, lesser spotted woodpecker, little egret, little ringed plover, long-eared owl, marsh tit, merlin, nightjar, peregrine, pochard, ringed plover, siskin, snipe, stonechat, teal, water rail, whinchat, willow tit and woodcock. All of these species were recorded within 2km of land required for the construction of the Proposed Scheme in the Holcroft Moss to Hole Mill Farm area since 2010.

Schedule 1 surveys

Barn owl surveys

2.4.83 No barn owl surveys were carried out in this area as no suitable features were identified during scoping. The desk study returned 71 further records of barn owl within 2km of land required for the construction of the Proposed Scheme in the Holcroft Moss to Hole Mill Farm area since 2010. The nearest three of these records were within the land required for the construction of the Proposed Scheme.

Hobby surveys

2.4.84 No hobby surveys were carried out in this section due to limited suitable nesting habitat within and adjacent to the land required for the construction of the Proposed Scheme. The desk study returned 83 records of hobby within 2km of land required for the construction of the Proposed Scheme in the Holcroft Moss to Hole Mill Farm area since 2010. The nearest of these records was 70m south of the land required for the construction of the Proposed

Background Information and Data
 Ecology and biodiversity
 BID EC-009-00001
 Ecological baseline data – breeding and wintering birds

Scheme, while most were recorded at Glazebrook Moss, Risley Moss and Risley disused landfill site.

Kingfisher surveys

2.4.85 Kingfisher surveys were not carried out in this section, as suitable habitats were covered by breeding bird surveys and none were recorded. The desk study returned five records of kingfisher within 2km of land required for the construction of the Proposed Scheme in the Holcroft Moss to Hole Mill Farm area since 2010. The nearest two of these records were within the land required for the construction of the Proposed Scheme to the west of Holcroft Moss in 2012. Only one of these records to the south of New Hall is in suitable breeding habitat.

Pestfurlong to Culcheth (BB1_DT02)

General breeding bird survey

2.4.86 Five survey visits were carried out from Pestfurlong to Culcheth between 22 March and 27 June 2018. In total, 59 bird species were recorded, including 28 notable species. Breeding territories of 25 species were recorded, of which 10 are notable.

2.4.87 Table 22 provides a summary of the estimated number of breeding territories for the notable species recorded.

Table 22: Notable birds recorded during the surveys at Pestfurlong to Culcheth (BB1_DT02)

| Common name | Scientific name | Status | Estimated number of breeding territories | Number of survey visits during which the species were recorded (out of the total) |
|----------------------|------------------------------|--|--|---|
| Dunnock | <i>Prunella modularis</i> | Amber list, Species of Principal Importance | 1 | 5(5) |
| House sparrow | <i>Passer domesticus</i> | Red list, Species of Principal Importance, Cheshire LBAP | 3 | 5(5) |
| Lapwing | <i>Vanellus vanellus</i> | Red list, Species of Principal Importance Cheshire LBAP | 2 | 4(5) |
| Little ringed plover | <i>Charadrius dubius</i> | Schedule 1, RBBP, Rare in Cheshire | 1 | 2(5) |
| Mallard | <i>Anas platyrhynchos</i> | Amber list | 3 | 5(5) |
| Oystercatcher | <i>Haematopus ostralegus</i> | Amber list | 1 | 2(5) |
| Reed bunting | <i>Emberiza schoeniclus</i> | Amber list, Species of Principal Importance, | 2 | 5(5) |

Background Information and Data

Ecology and biodiversity

BID EC-009-00001

Ecological baseline data – breeding and wintering birds

| Common name | Scientific name | Status | Estimated number of breeding territories | Number of survey visits during which the species were recorded (out of the total) |
|----------------|-------------------------------|--|--|---|
| | | Cheshire LBAP | | |
| Skylark | <i>Alauda arvensis</i> | Red list, Species of Principal Importance, Cheshire LBAP | 1 | 5(5) |
| Song thrush | <i>Turdus philomelos</i> | Red list, Species of Principal Importance, Cheshire LBAP | 1 | 5(5) |
| Willow warbler | <i>Phylloscopus trochilus</i> | Amber list | 2 | 4(5) |

2.4.88 Desk study records for the Pestfurlong to Culcheth area are presented above under the Holcroft Moss to Hole Mill Farm area (BB1_DT04), as both transects cover land parallel to the same section of the route.

Schedule 1 surveys

Barn owl surveys

2.4.89 Two nest boxes were observed during barn owl surveys in 2018 near Yew Tree Farm, 180m south-west of the land required for the construction of the Proposed Scheme. One had no visible evidence, the other had remains of pellets and was considered to have high potential for use as a nest site. A derelict building with a confirmed old roost site was identified within the land required for the construction of the Proposed Scheme at Wigshaw during surveys in 2019, with a tree nearby providing a suitable site for roosting or nesting. Three barn owl nest boxes and a building with potential to provide a barn owl nest site were identified between 345m and 500m from the land required for the Proposed Scheme at Lane Head during surveys in 2019, but no evidence of nesting was recorded. Barn owl desk study records for the Pestfurlong to Culcheth area are presented above under the Holcroft Moss to Hole Mill Farm area, as both transects cover land parallel to the same section of the route.

Hobby surveys

2.4.90 Two hobby surveys were carried out in the area of Culcheth, Warrington in August 2018. No active hobby nest was recorded in this area. Hobby desk study records for the Pestfurlong to Culcheth area are presented above under the Holcroft Moss to Hole Mill Farm area, as both transects cover land parallel to the same section of the route.

Kingfisher surveys

2.4.91 No kingfisher surveys were carried out in this section due to limited suitable habitat within and adjacent to the land required for the construction of the Proposed Scheme. Kingfisher desk study records for the Pestfurlong to Culcheth area are presented above under the

Background Information and Data
 Ecology and biodiversity
 BID EC-009-00001
 Ecological baseline data – breeding and wintering birds

Holcroft Moss to Hole Mill Farm area, as both transects cover land parallel to the same section of the route.

Golborne to Bamfurlong (BB1_DT03)

General breeding bird survey

- 2.4.92 Five survey visits were carried out from Golborne to Bamfurlong between 21 March and 29 June 2018. In total, 66 bird species were recorded, including 35 notable species. Breeding territories of 33 species were recorded, of which 13 are notable.
- 2.4.93 Table 23 provides a summary of the estimated number of breeding territories for the notable species recorded.

Table 23: Notable birds recorded during the surveys at Golborne to Bamfurlong (BB1_DT03)

| Common name | Scientific name | Status | Estimated number of breeding territories | Number of survey visits during which the species were recorded (out of the total) |
|---------------|------------------------------|--|--|---|
| Dunnock | <i>Prunella modularis</i> | Amber List, Species of Principal Importance | 8 | 4(5) |
| House sparrow | <i>Passer domesticus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 4 | 3(5) |
| Lapwing | <i>Vanellus vanellus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 5 | 5(5) |
| Linnet | <i>Linaria cannabina</i> | Red List, Species of Principal Importance, Cheshire LBAP | 1 | 2(5) |
| Mallard | <i>Anas platyrhynchos</i> | Amber List | 1 | 2(5) |
| Mistle thrush | <i>Turdus viscivorus</i> | Red List | 2 | 2(5) |
| Oystercatcher | <i>Haematopus ostralegus</i> | Amber List | 1 | 2(5) |
| Reed bunting | <i>Emberiza schoeniclus</i> | Amber List, Species of Principal Importance, Cheshire LBAP | 5 | 5(5) |
| Skylark | <i>Alauda arvensis</i> | Red List, Species of Principal Importance, Cheshire LBAP | 4 | 4(5) |
| Song thrush | <i>Turdus philomelos</i> | Red List, Species of Principal | 3 | 3(5) |

Background Information and Data

Ecology and biodiversity

BID EC-009-00001

Ecological baseline data – breeding and wintering birds

| Common name | Scientific name | Status | Estimated number of breeding territories | Number of survey visits during which the species were recorded (out of the total) |
|----------------|-------------------------------|--|--|---|
| | | Importance, Cheshire LBAP | | |
| Stock dove | <i>Columba oenas</i> | Amber List | 1 | 3(5) |
| Willow warbler | <i>Phylloscopus trochilus</i> | Amber List | 4 | 4(5) |
| Yellowhammer | <i>Emberiza citrinella</i> | Red List, Species of Principal Importance, Cheshire LBAP | 2 | 4(5) |

2.4.94 In addition to the above records, the surveys identified possible breeding territories of Cetti's warbler, grey partridge, redshank and willow tit. An incidental record of a willow or marsh tit was recorded in woodland around Ince Moss during other ecological surveys in 2018. The desk study returned records of bittern, black-necked grebe, Cetti's warbler, common crossbill, common sandpiper, corn bunting, cuckoo, curlew, kingfisher, little ringed plover, peregrine, teal and willow tit within 2km of land required for the construction of the Proposed Scheme in the Golborne to Bamfurlong area since 2010.

Schedule 1 surveys

Barn owl surveys

2.4.95 Two barn owl nest boxes were observed at Little Byrom Hall Farm and at Ballam during barn owl surveys, adjacent and 300m east of the land required for the construction of the Proposed Scheme respectively. The landowners reported that the former was an active nest, and hearing calls from the location of the latter over the previous weeks. The desk study returned 45 records of barn owl within 2km of land required for the construction of the Proposed Scheme in the Golborne to Bamfurlong area since 2010. The nearest four of these records were 15m south-east of the land required for the construction of the Proposed Scheme in 2010 and 2011.

Hobby surveys

2.4.96 One hobby survey was carried out in the area of Stubshaw Cross, Wigan in August 2018. No active hobby nest was recorded in this area. Although only one survey was carried out due to access restrictions, it is considered unlikely that hobby were nesting in this area at that time. The desk study returned 50 records of hobby within 2km of land required for the construction of the Proposed Scheme in the Golborne to Bamfurlong area since 2010. The nearest of these records was 40m from the land required for the construction of the Proposed Scheme and they have been recorded as being present regularly around Abram Flashes, which is likely to provide foraging habitat.

Kingfisher surveys

2.4.97 Two kingfisher surveys were carried out in the area of Stubshaw Cross, Wigan in April and June 2018. No evidence of nesting kingfisher was recorded in this area. Two incidental observations of kingfisher were recorded along the canal during other ecological surveys in 2018 and 2019. The desk study returned 304 records of kingfisher within 2km of land required for the construction of the Proposed Scheme in the Golborne to Bamfurlong area since 2010. Generally associated with the Hey Brook, ponds and canal and the Leeds and Liverpool Canal at Abram Flashes, the nearest of these records was 55m north-east of the land required for the construction of the Proposed Scheme.

Hulseheath to Manchester Airport (MA06)

Booth Bank to Newhall Farm (BB1_BT10)

General breeding bird surveys

2.4.98 Five survey visits were carried out from Booth Bank to Newhall Farm between 30 April and 3 July 2019. In total, 44 bird species were recorded, including 18 notable species. Breeding territories of 23 species were recorded, of which nine are notable.

2.4.99 Table 24 provides a summary of the estimated number of breeding territories for the notable species recorded.

Table 24: Notable birds recorded during the surveys at Booth Bank to Newhall Farm (BB1_BT10)

| Common name | Scientific name | Status | Estimated number of breeding territories | Number of survey visits during which the species were recorded (out of the total) |
|---------------|-----------------------------|--|--|---|
| Duncock | <i>Prunella modularis</i> | Amber List, Species of Principal Importance | 1 | 3(5) |
| House sparrow | <i>Passer domesticus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 2 | 5(5) |
| Lapwing | <i>Vanellus vanellus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 1 | 2(5) |
| Mallard | <i>Anas platyrhynchos</i> | Amber list | 2 | 4(5) |
| Reed bunting | <i>Emberiza schoeniclus</i> | Amber List, Species of Principal Importance, Cheshire LBAP | 1 | 2(5) |
| Skylark | <i>Alauda arvensis</i> | Red list, Species of Principal Importance, Cheshire LBAP | 2 | 4(5) |
| Song thrush | <i>Turdus philomelos</i> | Red List, Species of Principal Importance, Cheshire LBAP | 3 | 3(5) |
| Starling | <i>Sturnus vulgaris</i> | Red List, Species of Principal Importance, Cheshire LBAP | 2 | 3(5) |
| Yellowhammer | <i>Emberiza citrinella</i> | Species of Principal | 1 | 3(5) |

Background Information and Data

Ecology and biodiversity

BID EC-009-00001

Ecological baseline data – breeding and wintering birds

| Common name | Scientific name | Status | Estimated number of breeding territories | Number of survey visits during which the species were recorded (out of the total) |
|-------------|-----------------|-------------------------------------|--|---|
| | | Importance, Cheshire LBAP, Red list | | |

- 2.4.100 In addition to the above records, the surveys identified possible breeding territories of grey partridge and yellow wagtail. Desk study records for the Booth Bank to Newhall Farm area are presented above under the Park Farm to Agden Brow area, as both transects cover land parallel to the same section of the route.

Schedule 1 surveys

Barn owl surveys

- 2.4.101 A tawny owl box was recorded 95m east of the land required for the construction of the Proposed Scheme at Booth Bank, which provides a potential nest site for barn owl. No evidence of occupation was observed. An incidental observation of a barn owl flying overhead was recorded in the same area during other ecological surveys in 2018. Barn owl desk study records for the Booth Bank to Newhall Farm area are presented above under the Park Farm to Agden Brow area, as both transects cover land parallel to the same section of the route.

Hobby surveys

- 2.4.102 No hobby surveys were carried out in this section due to limited suitable nesting habitats within and adjacent to the land required for the construction of the Proposed Scheme. Hobby desk study records for the Booth Bank to Newhall Farm area are presented above under the Park Farm to Agden Brow area, as both transects cover land parallel to the same section of the route.

Kingfisher surveys

- 2.4.103 No kingfisher surveys were carried out in this section as suitable habitats were sufficiently covered by general breeding bird surveys, where none were recorded. Kingfisher desk study records for the Booth Bank to Newhall Farm area are presented above under the Park Farm to Agden Brow area, as both transects cover land parallel to the same section of the route.

Cherry Tree Farm to Mobberley Road (BB1_BT09)

General breeding bird surveys

- 2.4.104 Five survey visits were carried out from Cherry Tree Farm to Mobberley Road between 29 April and 25 June 2019. In total, 44 bird species were recorded, including 15 notable species. Breeding territories of 24 species were recorded, of which seven are notable.

Background Information and Data

Ecology and biodiversity

BID EC-009-00001

Ecological baseline data – breeding and wintering birds

2.4.105 Table 25 provides a summary of the estimated number of breeding territories for the notable species recorded.

Table 25: Notable species recorded during surveys at Cherry Tree Farm to Mobberley Road (BB1_BT09)

| Common name | Scientific name | Status | Estimated number of breeding territories | Number of survey visits during which the species were recorded (out of the total) |
|---------------|-----------------------------|--|--|---|
| Dunnock | <i>Prunella modularis</i> | Amber List, Species of Principal Importance | 1 | 4(5) |
| House sparrow | <i>Passer domesticus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 2 | 5(5) |
| Mallard | <i>Anas platyrhynchos</i> | Amber list | 5 | 5(5) |
| Reed bunting | <i>Emberiza schoeniclus</i> | Amber List, Species of Principal Importance, Cheshire LBAP | 1 | 3(5) |
| Skylark | <i>Alauda arvensis</i> | Red list, Species of Principal Importance, Cheshire LBAP | 1 | 5(5) |
| Song thrush | <i>Turdus philomelos</i> | Red List, Species of Principal Importance, Cheshire LBAP | 2 | 4(5) |
| Stock dove | <i>Columba oenas</i> | Amber List | 1 | 5(5) |

2.4.106 In addition to the above records, the surveys identified possible breeding territories of marsh tit, woodcock and yellow wagtail. The desk study returned records of bittern, black-necked grebe, common crossbill, common sandpiper, cuckoo, curlew, goosander, lesser spotted woodpecker, little egret, peregrine, pochard, redstart, siskin, snipe, stonechat, teal, water rail, willow tit and woodcock within 2km of land required for the construction of the Proposed Scheme in the Cherry Tree Farm to Mobberley Road area since 2010.

Schedule 1 surveys

Barn owl surveys

2.4.107 No survey for barn owl were carried out in this section as no suitable features were identified during scoping. The desk study returned 14 records of barn owl within 2km of the land required for the construction of the Proposed Scheme in the Cherry Tree Farm to Mobberley Road area since 2010. The nearest two of these records were within the land required for the construction of the Proposed Scheme.

Hobby surveys

- 2.4.108 No survey for hobby were carried out in this section due to limited suitable nesting habitat within and adjacent to the land required for the construction of the Proposed Scheme. The desk study returned 42 records of hobby within 2km of land required for the construction of the Proposed Scheme in the Cherry Tree Farm to Mobberley Road area since 2010. The nearest 11 of these records were within the land required for the construction of the Proposed Scheme.

Kingfisher surveys

- 2.4.109 No kingfisher surveys were carried out in this section as suitable habitats were sufficiently covered during general breeding bird surveys. The desk study returned 43 records of kingfisher within 2km of land required for the construction of the Proposed Scheme in the Cherry Tree Farm to Mobberley Road area since 2010. The nearest 11 of these records were within the land required for the construction of the Proposed Scheme. These records were primarily clustered around Rostherne Mere, the nearest being approximately 450m to the south.

Newhall Farm to Manchester Airport (BT11)

General breeding bird surveys

- 2.4.110 General breeding bird surveys were not carried out in the Newhall Farm to Manchester Airport area due to limited access and because surveys in adjacent survey sections provide sufficient coverage to sample the habitats present. The desk study returned no important records of notable birds, except those Schedule 1 species noted below, within 2km of land required for the construction of the Proposed Scheme in the Newhall Farm to Manchester Airport area since 2010.

Schedule 1 surveys

Barn owl surveys

- 2.4.111 No surveys for barn owl were carried out in this section. One incidental observation of a barn owl roost site was recorded near Thorns Green during other ecological surveys in 2018. Cheshire Barn Owl Group provided two records of breeding barn owl for 2020 within 2km of the land required for the construction of the Proposed Scheme in the Newhall Farm to Manchester Airport area. The nearest of these records was located 205m north-east of the land required for the construction of the Proposed Scheme.

Hobby surveys

- 2.4.112 Two hobby survey visits were carried out in the area of Newhall Farm to Manchester Airport in July and August 2019. No active hobby nests were recorded in this area. The desk study

returned no records of hobby within 2km of land required for the construction of the Proposed Scheme in the Newhall Farm to Manchester Airport area since 2010.

Kingfisher surveys

- 2.4.113 Two kingfisher survey visits were carried out on the River Bollin in April and July 2019. A potential nest site was identified within the land required for the construction of the Proposed Scheme, but no activity was recorded. The desk study returned no records of kingfisher within 2km of land required for the construction of the Proposed Scheme in the Newhall Farm to Manchester Airport area since 2010.

Manchester Airport

General breeding bird surveys

- 2.4.114 General breeding bird surveys were scoped out in the Manchester Airport area due to survey coverage in nearby sections and limited habitat value and extent within and adjacent to the land required for construction of the Proposed Scheme. The desk study returned records of cuckoo, curlew, dipper and peregrine within 2km of land required for the construction of the Proposed Scheme in the Manchester Airport area since 2010.

Schedule 1 surveys

- 2.4.115 No Schedule 1 species surveys were carried out in the Manchester Airport area due to access restrictions and limited suitability of habitats for nesting within and adjacent to the land required for construction of the Proposed Scheme. Cheshire Barn Owl Group provided one record of breeding barn owl within 2km of the land required for the construction of the Proposed Scheme in the Newhall Farm to Manchester Airport area in 2020. The nearest of these records was located 1.5km south-west of the land required for the construction of the Proposed Scheme. Desk study records within 2km of land required for the construction of the Proposed Scheme in the Manchester Airport area since 2010 included: 12 records of barn owl and one record of black redstart. For these species, the nearest records to the land required for the construction of the Proposed Scheme were barn owl, 1.1km south-east, and black redstart, 345m south-east.

Davenport Green to Ardwick (MA07)

- 2.4.116 General breeding bird surveys were scoped out because, the route is in tunnel through this section and the extent of suitable habitats is limited within and adjacent to the land required for the construction of the Proposed Scheme. As such, map series EC-08 does not include any mapsheets for MA07.

Newall Green to Northenden

General breeding bird surveys

- 2.4.117 General breeding bird surveys were scoped out because, the route is in tunnel through this section and the extent of suitable habitats is limited within and adjacent to the land required for the construction of the Proposed Scheme. The desk study returned records of common sandpiper, curlew and willow tit, plus a heronry at Wrengate Wood, Didsbury, within 2km of land required for the construction of the Proposed Scheme in the Newall Green to Northenden area since 2010.

Schedule 1 surveys

- 2.4.118 No schedule 1 species surveys were carried out in the Newall Green to Northenden area due to limited suitability of habitats for nesting within and adjacent to the land required for the construction of the Proposed Scheme. Desk study records within 2km of land required for the construction of the Proposed Scheme in the Newall Green to Northenden area since 2010 included: two records of barn owl and two records of kingfisher. For these species, the nearest records to the land required for the construction of the Proposed Scheme were barn owl, 265m north-east, and kingfisher, 1.7km south-east.

Northenden to Didsbury

General breeding bird surveys

- 2.4.119 General breeding bird surveys were scoped out because the route is in tunnel through this section and the extent of suitable habitats within and adjacent to the land required for the construction of the Proposed Scheme is limited. The desk study returned records of common sandpiper, lesser spotted woodpecker and willow tit within 2km of land required for the construction of the Proposed Scheme in the Northenden to Didsbury area since 2010.

Schedule 1 surveys

- 2.4.120 No Schedule 1 species surveys were carried out in the Northenden to Didsbury area due to the limited suitability of habitats for nesting within and adjacent to land required for the construction of the Proposed Scheme. Desk study records within 2km of land required for the construction of the Proposed Scheme in the Northenden to Didsbury area since 2010 included: one record of barn owl; two records of black redstart; and 10 records of kingfisher. For these species, the nearest records to the land required for the construction of the Proposed Scheme were: barn owl, 625m east; black redstart, 1.5km north-west; and kingfisher, 780m north-west.

Didsbury to Manchester city centre

General breeding bird surveys

- 2.4.121 General breeding bird surveys were scoped out because the route is in tunnel through this section and the extent of suitable habitats within and adjacent to the land required for the construction of the Proposed Scheme is limited. The desk study returned records of curlew, little ringed plover and peregrine within 2km of land required for the construction of the Proposed Scheme in the Didsbury to Manchester city centre area since 2010.

Schedule 1 surveys

- 2.4.122 Desk study records within 2km of land required for the construction of the Proposed Scheme in the Didsbury to Manchester city centre area since 2010 included: two records of barn owl and 13 records of kingfisher. For these species, the nearest records to the land required for the construction of the Proposed Scheme were: barn owl, 1.5km north-west and kingfisher, 885m south-east.

Black redstart surveys

- 2.4.123 Five survey visits for black redstart were carried out around Ardwick Station and Depot between 17 April and 19 June 2018. Suitable habitat was present, but no evidence of black redstart was recorded. The desk study returned no records of black redstart within 2km of land required for the construction of the Proposed Scheme in the Didsbury to Manchester city centre area since 2010.

Manchester Piccadilly Station (MA08)

Manchester City Centre

General breeding bird surveys

- 2.4.124 General breeding bird surveys were scoped out due to limited suitable habitats in urbanised areas through this section. As such, map series EC-08 does not include any mapsheets for MA08. The desk study returned records of common sandpiper, cuckoo, little ringed plover and peregrine within 2km of land required for the construction of the Proposed Scheme in the Manchester city centre area since 2010.

Schedule 1 surveys

- 2.4.125 The desk study returned 15 records of kingfisher within 2km of land required for the construction of the Proposed Scheme in the Manchester city centre area since 2010. The nearest of these records was 800m south-west of the land required for the construction of the Proposed Scheme.

Background Information and Data

Ecology and biodiversity

BID EC-009-00001

Ecological baseline data – breeding and wintering birds

Black redstart surveys

- 2.4.126 Five survey visits for black redstart were carried out at Manchester Piccadilly Station between 20 April and 14 June 2018. Suitable habitat was present, and a single singing male was recorded on the first visit, 160m west of the land required for the construction of the Proposed Scheme.
- 2.4.127 The desk study returned 74 records of black redstart within 2km of the land required for the construction of the Proposed Scheme since 2010. The nearest of these was recorded 315m south-west of the land required for the construction of the Proposed Scheme.

3 Wintering birds

3.1 Methodology

General wintering bird survey

- 3.1.1 Details of the standard methodology utilised for wintering bird surveys are provided in the Technical Note – Ecology and biodiversity - Ecological Field Survey Methods and Standards (FSMS) included in the Environmental Impact Assessment Scope and Methodology Report (SMR).
- 3.1.2 The approach taken to sampling the Proposed Scheme for the presence of wintering birds was based on:
- desk study records relating to wintering birds for the area within 2km of the land required for the construction of the Proposed Scheme, obtained from the county biological records centres (Staffordshire Ecological Record, rECOrd (Local Biological Records Centre for the Cheshire region), GMLRC (Greater Manchester Local Record Centre) and Merseyside Biobank, Local Biological Records Centre for the North Merseyside Region;
 - records of wintering birds for the area within 2km of the land required for the construction of the Proposed Scheme included in the West Midlands Bird Club Annual Report 2016, Greater Manchester Annual Bird Report 2011 and Cheshire and Wirral Bird Report 2016; and
 - interpretation of aerial photography and Phase 1 surveys to identify habitats that may be suitable for wintering birds.
- 3.1.3 Monthly survey visits to each site were undertaken between September 2017 and February 2018, September 2018 and March 2019 and November 2019 and March 2020, depending on when access was obtained to the site. Therefore, each site was surveyed on up to seven occasions.
- 3.1.4 Table 26 summarises the 23 locations where surveys for wintering birds were undertaken in MA01 to MA06. These surveys were scoped out for MA07 and MA08 because suitable habitats are limited and the route is primarily in tunnel. This information is cross-referenced to the accompanying Ecology Map Series EC-09. Ecology survey codes consist of transect reference numbers and visit numbers. For example, AT01A-F_WB1 refers to general wintering bird survey (WB1), transect AT01, visits 1-6.

Background Information and Data
 Ecology and biodiversity
 BID EC-009-00001
 Ecological baseline data – breeding and wintering birds

Table 26: Summary of wintering bird field surveys undertaken within MA01, MA02, MA03, MA04, MA05 and MA06

| Ecology survey code | Survey site name | Location | Centroid OS grid reference | Habitat types included in survey | Survey date(s) | CA | Approximate distance from the land required for the construction of the Proposed Scheme (m) |
|---------------------|--|---------------------------------------|----------------------------|---|---|------|---|
| WB1_AT01A-F | Coppenhall Moss to Warmingham Moss | Coppenhall Moss, Crewe, Cheshire | SJ69765879 | Grassland, arable land, marshy grassland, woodland, and hedgerows | 25 September 2017 16 October 2017 13 November 2017 5 December 2017 8 January 2018 12 February 2018 | MA01 | Partly within |
| WB1_AT02A-F | Moss Lane to Park Hall Farm | Minshall Vernon, Middlewich, Cheshire | SJ68856047 | Grassland, arable land, ponds, woodland and hedges | 26 September 2017 17 October 2017 14 November 2017 4 December 2017 9 January 2018 13 February 2018 | MA01 | Partly within |
| WB1_AT11A-E | Lane Ends to Forge Bank | Warmingham, Cheshire | SJ70686080 | Mixed farmland, woodland, hedgerows, stream and ponds | 29 November 2018 14 December 2018 16 January 2019 14 February 2019 5 March 2019 | MA01 | 520m east |
| WB1_AT03A-F | Wimboldsley Hall to Wimboldsley Grange | Wimboldsley, Cheshire | SJ68506276 | Mixed farmland, hedgerows, woodland, stream | 27 September 2017 18 October 2017 15 November 2017 13 December 2017 11 January 2018 14 February 2018 | MA01 | Partly within |

Background Information and Data
 Ecology and biodiversity
 BID EC-009-00001
 Ecological baseline data – breeding and wintering birds

| Ecology survey code | Survey site name | Location | Centroid OS grid reference | Habitat types included in survey | Survey date(s) | CA | Approximate distance from the land required for the construction of the Proposed Scheme (m) |
|---------------------|----------------------------------|------------------------------------|----------------------------|---|--|------|---|
| WB1_AT10A-F | Park Hall Farm to River Wheelock | Wimboldsley, Cheshire | SJ69476310 | Mixed farmland, woodland, hedgerows, stream and ponds | 11 October 2018 7 November 2018 5 December 2018 15 January 2019 14 February 2019 28 March 2019 | MA01 | 140m east |
| WB1_AT04A-E | Wimboldsley to Stanthorne | Winsford, Cheshire | SJ66756497 | Mixed farmland, woodland, hedgerows, ponds | 28 September 2017 19 October 2017 16 November 2017 14 December 2017 11 January 2018 | MA02 | Partly within |
| WB1_AT05A-F | Croxton Bridge to Davenham Road | Moulton, Cheshire | SJ68706927 | Mixed farmland, woodland, hedgerows, ponds, streams and lakes | 20 October 2017 17 November 2017 6 December 2017 12 January 2018 14 February 2018 28 September 2018 | MA02 | Partly within |
| WB1_BT01A-E | Davenham Road to Cooke's Lane | Rudheath, Northwich, Cheshire | SJ68987210 | Mixed farmland, woodland, hedgerows, stream and ponds | 24 October 2017 21 November 2017 7 December 2017 18 January 2018 5 February 2018 | MA02 | Partly within |
| WB1_BT02aA-E | Broken Cross to Fieldhouse Farm | Lostock Green, Northwich, Cheshire | SJ69227380 | Lime beds, mixed farmland, hedgerows, stream | 25 October 2017 22 November 2017 8 December 2017 | MA02 | Partly within |

Background Information and Data
 Ecology and biodiversity
 BID EC-009-00001
 Ecological baseline data – breeding and wintering birds

| Ecology survey code | Survey site name | Location | Centroid OS grid reference | Habitat types included in survey | Survey date(s) | CA | Approximate distance from the land required for the construction of the Proposed Scheme (m) |
|---------------------|--------------------------------------|---------------------------|----------------------------|--|---|---------------|---|
| | | | | and ponds | 19 January 2018 6 February 2018 | | |
| WB1_BT02bA-E | Fieldhouse Farm to Pickmere | Lostock Gralam, Cheshire | SJ70057585 | Mixed farmland, woodland, hedgerows, stream and ponds | 25 October 2017 10 November 2017 18 December 2017 10 January 2018 7 February 2018 | MA02, MA03 | Partly within |
| WB1_BT08A-D | Tabley Grange to B5391 Pickmere Lane | Tabley, Cheshire | SJ70967735 | Grassland, arable land, woodlands, hedgerows, stream and ponds | 11 October 2018 17 January 2019 13 February 2019 27 March 2019 | MA03 | Partly within |
| WB1_BT03A-E | B5391 Pickmere Lane to Litley Farm | Knutsford, Cheshire | SJ70457937 | Mixed farmland, woodland, hedgerows, stream and ponds | 26 October 2017 23 November 2017 12 December 2017 19 January 2018 7 February 2018 | MA03 | Partly within |
| WB1_BT04A-E | Pownallgreen Farm to Hoo Green | Mere, Knutsford, Cheshire | SJ71268138 | Mixed farmland, woodland, hedgerows, stream and ponds | 17 October 2017 16 November 2017 13 December 2017 11 January 2018 9 February 2018 | MA03 | Partly within |
| WB1_BT12A-D | Betley Hurst Farm to Chapel Lane | Glazebrook, Cheshire | SJ71728237 | Mixed farmland, woodland and parkland, hedgerows | 20 November 2019 19 December 2019 22 January 2020 10 February 2020 | MA03 | Partly within |

Background Information and Data
 Ecology and biodiversity
 BID EC-009-00001
 Ecological baseline data – breeding and wintering birds

| Ecology survey code | Survey site name | Location | Centroid OS grid reference | Habitat types included in survey | Survey date(s) | CA | Approximate distance from the land required for the construction of the Proposed Scheme (m) |
|---------------------|----------------------------------|-------------------------------|----------------------------|--|--|------|---|
| WB1_BT05A-E | Park Farm to Agden Brow | High Legh, Cheshire | SJ71638465 | Mixed farmland, woodland, hedgerows, ponds, golf course | 19 October 2017 17 November 2017 14 December 2017 12 January 2018 15 February 2018 | MA03 | Partly within |
| WB1_BT13A-E | Chapel Lane to Agden Bridge Farm | Millington, Cheshire | SJ72088516 | Parkland, woodland, improved grassland, arable fields | 21 November 2019 11 December 2019 28 January 2020 13 February 2020 12 March 2020 | MA03 | Within |
| WB1_DT01A-E | Agden Brow to Bent Lane | Agden, Warrington | SJ71098761 | Grassland, arable land, hedgerows and ponds | 25 October 2017 28 November 2017 11 December 2017 17 January 2018 6 February 2018 | MA04 | Partly within |
| WB1_DT06A-E | South of Holcroft Moss | Mere, Cheshire | SJ68979229 | Canal, arable fields, grassland, woodland, pond, bracken | 3 December 2019 19 December 2019 29 January 2020 12 February 2020 11 March 2020 | MA04 | Partly within |
| WB1_DT02A-E | Pestfurlong to Culcheth | West of Wimboldsley, Cheshire | SJ65599432 | Grassland, arable land, hedgerows and ponds | 26 October 2017 29 November 2017 12 December 2017 16 January 2018 7 February 2018 | MA05 | Partly within |

Background Information and Data
 Ecology and biodiversity
 BID EC-009-00001
 Ecological baseline data – breeding and wintering birds

| Ecology survey code | Survey site name | Location | Centroid OS grid reference | Habitat types included in survey | Survey date(s) | CA | Approximate distance from the land required for the construction of the Proposed Scheme (m) |
|---------------------|-------------------------------|-----------------------|----------------------------|--|---|------|---|
| WB1_DT03A-E | Golborne to Bamfurlong | Stubshaw Cross, Wigan | SJ61280004 | Woodland, grassland, plantation, arable land, hedgerow, marsh, lakes and ponds | 30 October 2017 23 November 2017 12 December 2017 17 January 2018 7 February 2018 | MA05 | Partly within |
| WB1_DT07A-G | Windy Bank Farm to Lily Lane | Abram, Wigan | SJ60850076 | Grassland, woodland, scrub, lakes, ponds and canal | 16 October 2018 1 November 2018 28 November 2018 5 December 2018 22 January 2019 6 February 2019 7 March 2019 | MA05 | Partly within |
| WB1_BT06A-F | Ryecroft Farm to Moberly Road | Ashley, Cheshire | SJ76208429 | Mixed farmland, woodland, hedgerows, stream and ponds | 10 October 2018 13 November 2018 18 December 2018 8 January 2019 7 February 2019 5 March 2019 | MA06 | Partly within |
| WB1_BT07A-E | Booth Bank to Newhall Farm | Millington, Cheshire | SJ73088480 | Mixed farmland, woodland, hedgerows, stream and ponds | 9 October 2018 14 November 2018 14 December 2018 9 January 2019 6 February 2019 | MA06 | Partly within |

Background Information and Data

Ecology and biodiversity

BID EC-009-00001

Ecological baseline data – breeding and wintering birds

Vantage point surveys

- 3.1.5 The survey methodology for Vantage Point (VP) surveys was adapted from guidance by Scottish Natural Heritage²¹ and Natural England²² as referred to in the Technical Note – Ecology and biodiversity - Ecological Field Survey Methods and Standards (FSMS) included in the Scope and Methodology Report (SMR).
- 3.1.6 VP surveys were carried out within MA04 and MA06 where viaducts are proposed to be built. Surveys were carried out between 28 September 2017 and 21 March 2018 and between 14 November 2019 and 24 March 2020. VP surveys were also carried out within MA01, MA05 and MA06 where additional wintering bird information was required in relation to supporting habitats for designated sites. These surveys were carried out between 23 October 2018 and 27 March 2019. Table 27 summarises the surveys.

²¹ Scottish Natural Heritage (2017), *Recommended bird survey methods to inform impact assessment of onshore windfarms*.

²² Natural England (2015), *Wild birds: surveys and monitoring for onshore wind farms*. Available online at: <https://www.gov.uk/guidance/wild-birds-surveys-and-monitoring-for-onshore-wind-farms>.

Background Information and Data
 Ecology and biodiversity
 BID EC-009-00001
 Ecological baseline data – breeding and wintering birds

Table 27: Summary of vantage point surveys undertaken within MA01, MA04, MA05 and MA06

| Ecology survey code | Survey site name | Location | VP grid reference | Total recording time at each VP | Survey date(s) | CA | Approximate distance from the land required for the construction of the Proposed Scheme (m) |
|---------------------|---|------------------|-------------------|---------------------------------|--|------|---|
| AV02 | VP2_AV02_West of Sandbach_2 Supporting habitat for Sandbach Flashes Site of Special Scientific Interest (SSSI) | Warmingham | SJ70216031 | 33 Hours | 23 October 2018 31 October 2018 29 November 2018 6 December 2018 18 December 2018 10 January 2019 24 January 2019 13 February 2019 20 February 2019 6 March 2019 27 March 2019 | MA01 | 500m east |
| DV05 | VP1_DV05_Manchester Ship Canal, Manchester Ship Canal viaduct | Rixton, Cheshire | SJ69579018 | 30 Hours | 14 November 2019 25 November 2019 11 December 2019 20 December 2019 06 January 2020 21 January 2020 12 February 2020 25 February 2020 12 March 2020 24 March 2020 | MA04 | 300m west |
| DV01 | VP1_DV01_Coffin Lane culvert Abram embankment | Abram Flashes | SD60530045 | 24 Hours | 23 October 2017 31 October 2017 14 November 2017 24 November 2017 | MA05 | Within |

Background Information and Data
 Ecology and biodiversity
 BID EC-009-00001
 Ecological baseline data – breeding and wintering birds

| Ecology survey code | Survey site name | Location | VP grid reference | Total recording time at each VP | Survey date(s) | CA | Approximate distance from the land required for the construction of the Proposed Scheme (m) |
|---------------------|---|----------------------|-------------------|---------------------------------|--|------|---|
| | | | | | 5 December 2017 19 December 2017 10 January 2018 30 January 2018 | | |
| DV02 | VP2_DV02_Leeds-Liverpool Canal Supporting habitat for Bryn Marsh and Ince Moss SSSI | Ince-in-Makerfield | SD59420235 | 36 Hours | 24 October 2018 30 October 2018 8 November 2018 20 November 2018 6 December 2018 10 December 2018 9 January 2019 22 January 2019 6 February 2019 20 February 2019 20 March 2019 26 March 2019 | MA05 | 300m west |
| BV05 | VP1_BV05_Agden Brook Agden Brook Viaduct | Millington, Cheshire | SJ72688446 | 30 Hours | 19 November 2019 29 November 2019 10 December 2019 20 January 2020 11 February 2020 25 February 2020 11 March 2020 24 March 2020 | MA06 | Within |
| BV03 | VP2_BV03_west of Rostherne | Rostherne, Cheshire | SJ73458436 | 27 Hours | 15 November 2018 10 December 2018 | MA06 | 40m east |

Background Information and Data
 Ecology and biodiversity
 BID EC-009-00001
 Ecological baseline data – breeding and wintering birds

| Ecology survey code | Survey site name | Location | VP grid reference | Total recording time at each VP | Survey date(s) | CA | Approximate distance from the land required for the construction of the Proposed Scheme (m) |
|---------------------|---|---------------------|-------------------|---------------------------------|---|------|---|
| | Supporting habitat for Rostherne Mere SSSI, Ramsar | | | | 19 December 2018 9 January 2019 23 January 2019 6 February 2019 26 February 2019 20 March 2019 26 March 2019 | | |
| BV01 | VP1_BV01_Blackburn's Brook Blackburn's Brook Viaduct | Rostherne, Cheshire | SJ75558434 | 37 Hours | 28 September 2017 10 October 2017 28 October 2017 8 November 2017 29 November 2017 6 December 2017 20 December 2017 10 January 2018 31 January 2018 7 February 2018 21 February 2018 7 March 2018 21 March 2018 | MA06 | Within |

3.2 Identification of species most relevant to the assessment

3.2.1 Notable bird species are those which are listed on:

- Annex 1 of the Birds Directive¹⁰;
- Schedule 1 of the Wildlife and Countryside Act 1981 (as amended)¹⁰;
- Section 41 of the National Environment and Rural Communities Act 2006 (species of principal importance);
- Cheshire Local Biodiversity Action Plan (LBAP);
- Staffordshire Local Biodiversity Action Plan;
- Birds of Conservation Concern (Red and Amber species);
- the West Midland Bird Club and Cheshire and Wirral Ornithological Society annual bird reports regional breeding status ('very rare', 'rare', 'scarce' or 'uncommon'); and
- county rare or scarce species listed in Table 7 of the Cheshire Wildlife Trust's selection criteria for sites of county biological importance (Giles et al., 2014).

3.2.2 Records of notable species are summarised for each site, along with any groups of otherwise non-notable species that occur in numbers that may be important within the relevant county. Species listed on Annex 1 of the Birds Directive, those that are considered very rare, rare, scarce or uncommon in the relevant county, and any others that are used in site selection criteria on a county basis are identified in the accompanying Map Series EC-09.

3.2.3 Species of specific relevance for vantage point surveys are described as 'target species'²³. For vantage point surveys relating to proposed viaducts, target species consist of those listed on:

- Annex 1 of the Birds Directive¹⁰;
- Schedule 1 of the Wildlife and Countryside Act 1981¹⁰ (as amended);
- county rare or scarce species:
- Birds of Conservation Concern Red list species);
- qualifying species of relevant protected sites; and
- notable species as defined above that are likely to be at high risk of collision, i.e. ducks and geese.

3.2.4 Target species for vantage points not related to viaducts are the same as notable species defined above, plus any additional qualifying species cited for protected sites relating to the vantage point location.

²³ Selection of target species is based broadly on Scottish Natural Heritage (2017), *Recommended bird survey methods to inform impact assessment of onshore windfarms*.

3.3 Deviations, constraints and limitations

- 3.3.1 No deviations to the standard methodology were applied and, subject to the constraints and limitations identified in the following section, all surveys were conducted as per the standard methodology provided in the Technical Note HS2 Ecological Surveys: FSMS included in the SMR.
- 3.3.2 Surveys undertaken were limited to locations where landowner permission was obtained and from PRow (except where access for survey was refused).
- 3.3.3 Survey access to WB1_BT08 was intermittent and, consequently, only four survey visits were carried out at this site. Due to access and weather limitations, some vantage point surveys were subject to less than the full 36 hours of surveying (see Table 27).
- 3.3.4 Land access was not available during the appropriate survey period for general wintering bird surveys at three locations that were selected as representative of suitable habitats for notable species and/or assemblages of wintering birds. Access was also not available for three vantage point survey locations. These sites are listed in Table 28.

Table 28: Summary of the locations within MA01, MA02, MA03, MA04 and MA06 where requirement for wintering bird survey was identified but no access was available.

| Survey site name | Location | Centroid OS grid reference | Habitat types | CA | Approximate distance from the land required for the construction of the Proposed Scheme (m) |
|------------------|----------------------|----------------------------|--|------|---|
| VP2_AV01 | Coppenhall Moss | SJ71225864 | Mixed farmland and open water. | MA01 | 290m west |
| WB1_AT12 | Warmingham, Cheshire | SJ70096062 | Mixed farmland, hedgerows and drains | MA01 | Partly within |
| VP2_AV03 | Wimboldsley | SJ69036307 | Mixed farmland | MA02 | Within |
| VP2_BV04 | Pickmere, Cheshire | SJ70547683 | Mixed farmland | MA03 | Within |
| WB1_DT05 | Warburton, Cheshire | SJ70349030 | Mixed farmland, canal, woodland, grassland and scrub | MA04 | Within |
| WB1_BT14 | Ashley, Cheshire | SJ782638371 | Mixed farmland, hedgerows and woodland | MA06 | Partially within |

- 3.3.5 Partial restrictions and limitations to individual wintering bird surveys are detailed in Table 29.

Table 29: Limitations to wintering bird surveys within MA01, MA02, MA03, MA04 and MA05

| Survey | Date | CA | Restriction |
|-----------------------------------|--------------|------|--|
| WB1_AT11 Visit 1 (Wintering bird) | October 2018 | MA01 | No survey undertaken due to access restrictions. |

Background Information and Data
 Ecology and biodiversity
 BID EC-009-00001
 Ecological baseline data – breeding and wintering birds

| Survey | Date | CA | Restriction |
|---|--------------------------------|------|---|
| WB1_AT04 Visit 6 (Wintering bird) | February 2018 | MA02 | No survey undertaken due to access restrictions. |
| WB1_AT04 Visit 6 (Wintering bird) | February 2018 | MA02 | No survey undertaken due to access restrictions. |
| WB1_AT04 Visit 6 (Wintering bird) | February 2018 | MA02 | No survey undertaken due to access restrictions. |
| WB1_BT04 Visit 1 (Wintering bird) | 17 October 2017 | MA03 | Area inaccessible between grid reference SJ70948056 and SJ70938051. |
| WB1_BT04 Visit 2 (Wintering bird) | 16 November 2017 | MA03 | Area inaccessible between grid reference SJ70948056 and SJ70938051. |
| WB1_BT08 Visit2, Visit 3 (Wintering bird) | November 2018 December 2018 | MA03 | No survey undertaken due to access restrictions. |
| WB1_BT12 Visit 1 (Wintering bird) | October 2019 | MA03 | No survey due to delayed access (five surveys in total, so not a significant limitation). |
| WB1_BT13 Visit 1 (Wintering bird) | October 2019 | MA03 | No survey due to delayed access (five surveys in total, so not a significant limitation). |
| WB1_BT12 Visit 2 (Wintering bird) | 19 December 2019 | MA03 | Transect cut short due to insufficient access. |
| WB1_DT06 Visit 1 (Wintering bird) | October 2019 | MA04 | No survey due to delayed access (five surveys in total, so not a significant limitation). |
| WB1_DT07 Visit 4 (Wintering bird) | 5 December 2018 | MA05 | Flooding on pathway restricted access. |

3.4 Baseline: wintering bird survey

3.4.1 The survey sites are reported south to north through the CA below.

Hough to Walley's Green (MA01)

Coppenhall Moss to Warmingham Moss (WB1_AT01)

3.4.2 Six survey visits were carried out at Coppenhall Moss to Warmingham Moss between 25 September 2017 and 12 February 2018. In total, 31 bird species were recorded during the surveys, of which 12 are notable.

3.4.3 Table 30 provides a summary of notable species recorded.

Table 30: Notable wintering bird survey records from Coppenhall Moss to Warmingham Moss (WB1_AT01)

| Common name | Scientific name | Status | Maximum count of individuals during the survey period | Number of survey visits during which the species were recorded (out of the total) |
|-------------------|------------------------|------------|---|---|
| Black-headed gull | <i>Chroicocephalus</i> | Amber List | 30 | 2(6) |

Background Information and Data
 Ecology and biodiversity
 BID EC-009-00001
 Ecological baseline data – breeding and wintering birds

| Common name | Scientific name | Status | Maximum count of individuals during the survey period | Number of survey visits during which the species were recorded (out of the total) |
|--------------------------|----------------------------|--|---|---|
| | <i>ridibundus</i> | | | |
| Dunnock | <i>Prunella modularis</i> | Amber List, Species of Principal Importance | 1 | 2(6) |
| Fieldfare | <i>Turdus pilaris</i> | Schedule 1, RBBP, Red List | 65 | 3(6) |
| Great black-backed gull | <i>Larus marinus</i> | Amber List | 5 | 1(6) |
| House sparrow | <i>Passer domesticus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 2 | 2(6) |
| Kestrel | <i>Falco tinnunculus</i> | Amber List | 1 | 2(6) |
| Lesser black-backed gull | <i>Larus fuscus</i> | Amber List | 300 | 4(6) |
| Mallard | <i>Anas platyrhynchos</i> | Amber List | 1 | 1(6) |
| Mistle thrush | <i>Turdus viscivorus</i> | Red List | 10 | 4(6) |
| Snipe | <i>Gallinago gallinago</i> | Amber List | 3 | 2(6) |
| Starling | <i>Sturnus vulgaris</i> | Red List, Species of Principal Importance, Cheshire LBAP | 400 | 5(6) |
| Yellowhammer | <i>Emberiza citrinella</i> | Red List, Species of Principal Importance, Cheshire LBAP | 1 | 1(6) |

Moss Lane to Park Hall Farm (WB1_AT02)

3.4.4 Six survey visits were carried out at Moss Lane to Park Hall Farm between 26 September 2017 and 13 February 2018. In total, 36 bird species were recorded during the surveys, of which 15 are notable. Due to temporary access restrictions, access to land parcel L5339, on Visit 4, was from PRoW only.

3.4.5 Table 31 provides a summary of notable species recorded.

Table 31: Notable wintering bird survey records from Moss Lane to Park Hall Farm (WB1_AT02)

| Common name | Scientific name | Status | Maximum count of individuals during the survey period | Number of survey visits during which the species were recorded (out of the total) |
|-------------------------|-----------------------------------|---|---|---|
| Barn Owl | <i>Tyto alba</i> | Schedule 1, Cheshire LBAP | 1 | 1(6) |
| Black-headed gull | <i>Chroicocephalus ridibundus</i> | Amber List | 63 | 1(6) |
| Dunnock | <i>Prunella modularis</i> | Amber List, Species of Principal Importance | 3 | 2(6) |
| Fieldfare | <i>Turdus pilaris</i> | Schedule 1, RBBP, Red List | 35 | 3(6) |
| Great black-backed gull | <i>Larus marinus</i> | Amber List | 55 | 2(6) |

Background Information and Data
 Ecology and biodiversity
 BID EC-009-00001
 Ecological baseline data – breeding and wintering birds

| Common name | Scientific name | Status | Maximum count of individuals during the survey period | Number of survey visits during which the species were recorded (out of the total) |
|--------------------------|----------------------------|--|---|---|
| Grey wagtail | <i>Motacilla cinerea</i> | Red List | 1 | 1(6) |
| House sparrow | <i>Passer domesticus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 7 | 4(6) |
| Kestrel | <i>Falco tinnunculus</i> | Amber List | 1 | 2(6) |
| Lapwing | <i>Vanellus vanellus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 75 | 2(6) |
| Lesser black-backed gull | <i>Larus fuscus</i> | Amber List | 180 | 4(6) |
| Mallard | <i>Anas platyrhynchos</i> | Amber List | 6 | 6(6) |
| Mistle thrush | <i>Turdus viscivorus</i> | Red List | 5 | 4(6) |
| Redwing | <i>Turdus iliacus</i> | Schedule 1, RBBP, Red List | 50 | 1(6) |
| Snipe | <i>Gallinago gallinago</i> | Amber List | 3 | 1(6) |
| Starling | <i>Sturnus vulgaris</i> | Red List, Species of Principal Importance, Cheshire LBAP | 200 | 6(6) |

Lane Ends to Forge Bank (WB1_AT11)

3.4.6 Five survey visits were carried out at Lane Ends to Forge Bank between 29 November 2018 and 5 March 2019. In total, 48 bird species were recorded during the surveys, of which 21 are notable.

3.4.7 Table 32 provides a summary of notable species recorded.

Table 32: Notable wintering bird survey records from Lane Ends to Forge Bank (WB1_AT11)

| Common name | Scientific name | Status | Maximum count of individuals during the survey period | Number of survey visits during which the species were recorded (out of the total) |
|-------------------------|-----------------------------------|---|---|---|
| Black-headed gull | <i>Chroicocephalus ridibundus</i> | Amber List | 100 | 5(5) |
| Duncock | <i>Prunella modularis</i> | Amber List, Species of Principal Importance | 1 | 2(5) |
| Fieldfare | <i>Turdus pilaris</i> | Schedule 1, RBBP, Red List | 200 | 2(5) |
| Great black-backed gull | <i>Larus marinus</i> | Amber List | 6 | 1(5) |
| Grey wagtail | <i>Motacilla cinerea</i> | Red List | 1 | 1(5) |
| Greylag goose | <i>Anser anser</i> | Schedule 1, Amber List | 3 | 1(5) |
| Herring gull | <i>Larus argentatus</i> | Red List, Species of Principal Importance | 2 | 2(5) |
| House sparrow | <i>Passer domesticus</i> | Red List, Species of Principal | 10 | 4(5) |

Background Information and Data
 Ecology and biodiversity
 BID EC-009-00001
 Ecological baseline data – breeding and wintering birds

| Common name | Scientific name | Status | Maximum count of individuals during the survey period | Number of survey visits during which the species were recorded (out of the total) |
|--------------------------|---------------------------|--|---|---|
| | | Importance, Cheshire LBAP | | |
| Kestrel | <i>Falco tinnunculus</i> | Amber List | 1 | 1(5) |
| Lapwing | <i>Vanellus vanellus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 5 | 1(5) |
| Lesser black-backed gull | <i>Larus fuscus</i> | Amber List | 60 | 5(5) |
| Linnet | <i>Linaria cannabina</i> | Red List, Species of Principal Importance, Cheshire LBAP | 2 | 1(5) |
| Mallard | <i>Anas platyrhynchos</i> | Amber List | 50 | 3(5) |
| Meadow pipit | <i>Anthus pratensis</i> | Amber List | 20 | 1(5) |
| Mistle thrush | <i>Turdus viscivorus</i> | Red List | 5 | 4(5) |
| Redwing | <i>Turdus iliacus</i> | Schedule 1, RBBP, Red List | 30 | 1(5) |
| Shelduck | <i>Tadorna tadorna</i> | Amber List | 11 | 1(5) |
| Song thrush | <i>Turdus philomelos</i> | Red List, Species of Principal Importance, Cheshire LBAP | 2 | 4(5) |
| Starling | <i>Sturnus vulgaris</i> | Red List, Species of Principal Importance, Cheshire LBAP | 100 | 4(5) |
| Stock dove | <i>Columba oenas</i> | Amber List | 2 | 1(5) |
| Teal | <i>Anas crecca</i> | Amber List | 5 | 1(5) |

Wimboldsley to Lostock Gralam (MA02)

Wimboldsley Hall to Wimboldsley Grange (WB1_AT03)

3.4.8 Six survey visits were carried out at Wimboldsley Hall to Wimboldsley Grange between 27 September 2017 and 14 February 2018. In total, 27 bird species were recorded during the surveys, of which 13 are notable.

3.4.9 Table 33 provides a summary of notable species recorded.

Table 33: Notable wintering bird survey records from Wimboldsley Hall to Wimboldsley Grange (WB1_AT03)

| Common name | Scientific name | Status | Maximum count of individuals during the survey period | Number of survey visits during which the species were recorded (out of the total) |
|-------------------|-----------------------------------|---|---|---|
| Black-headed gull | <i>Chroicocephalus ridibundus</i> | Amber List | 176 | 1(6) |
| Dunnock | <i>Prunella modularis</i> | Amber List, Species of Principal Importance | 3 | 1(6) |

Background Information and Data

Ecology and biodiversity

BID EC-009-00001

Ecological baseline data – breeding and wintering birds

| Common name | Scientific name | Status | Maximum count of individuals during the survey period | Number of survey visits during which the species were recorded (out of the total) |
|--------------------------|---------------------------|--|---|---|
| Fieldfare | <i>Turdus pilaris</i> | Schedule 1, RBBP, Red List | 24 | 1(6) |
| Great black-backed gull | <i>Larus marinus</i> | Amber List | 6 | 1(6) |
| Greylag goose | <i>Anser anser</i> | Schedule 1, Amber List | 20 | 1(6) |
| House sparrow | <i>Passer domesticus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 8 | 4(6) |
| Kingfisher | <i>Alcedo atthis</i> | Annex 1, Schedule 1, Amber List, | 1 | 1(6) |
| Lapwing | <i>Vanellus vanellus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 50 | 3(6) |
| Lesser black-backed gull | <i>Larus fuscus</i> | Amber List | 120 | 5(6) |
| Mallard | <i>Anas platyrhynchos</i> | Amber List | 4 | 3(6) |
| Mistle thrush | <i>Turdus viscivorus</i> | Red List | 7 | 4(6) |
| Mute swan | <i>Cygnus olor</i> | Amber List | 8 | 3(6) |
| Starling | <i>Sturnus vulgaris</i> | Red List, Species of Principal Importance, Cheshire LBAP | 1000 | 4(6) |

Park Hall Farm to River Wheelock (WB1_AT10)

3.4.10 Six survey visits were carried out at Park Hall Farm to River Wheelock between 20 October 2017 and February 2018, with an additional survey on 28 September 2018. In total, 39 bird species were recorded during the surveys, of which 14 are notable. Note that land parcels L5487 and NL064 could only be accessed by PRoW on visits 4 and 5 due to temporary access restrictions.

3.4.11 Table 34 provides a summary of notable species recorded.

Table 34: Notable wintering bird survey records from Park Hall Farm to River Wheelock (WB1_AT10)

| Common name | Scientific name | Status | Maximum count of individuals during the survey period | Number of survey visits during which the species were recorded (out of the total) |
|-------------------|-----------------------------------|--|---|---|
| Black-headed gull | <i>Chroicocephalus ridibundus</i> | Amber List | 200 | 2(6) |
| Bullfinch | <i>Pyrrhula pyrrhula</i> | Amber List, Species of Principal Importance, Cheshire LBAP | 2 | 1(6) |

Background Information and Data
 Ecology and biodiversity
 BID EC-009-00001
 Ecological baseline data – breeding and wintering birds

| Common name | Scientific name | Status | Maximum count of individuals during the survey period | Number of survey visits during which the species were recorded (out of the total) |
|--------------------------|---------------------------|--|---|---|
| Dunnock | <i>Prunella modularis</i> | Amber List, Species of Principal Importance | 1 | 3(6) |
| Fieldfare | <i>Turdus pilaris</i> | Schedule 1, RBBP, Red List | 35 | 4(6) |
| Grey wagtail | <i>Motacilla cinerea</i> | Red List | 1 | 1(6) |
| House sparrow | <i>Passer domesticus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 2 | 3(6) |
| Kestrel | <i>Falco tinnunculus</i> | Amber List | 1 | 1(6) |
| Lesser black-backed gull | <i>Larus fuscus</i> | Amber List | 20 | 5(6) |
| Mallard | <i>Anas platyrhynchos</i> | Amber List | 11 | 3(6) |
| Mistle thrush | <i>Turdus viscivorus</i> | Red List | 3 | 1(6) |
| Song thrush | <i>Turdus philomelos</i> | Red List, Species of Principal Importance, Cheshire LBAP | 1 | 1(6) |
| Starling | <i>Sturnus vulgaris</i> | Red List, Species of Principal Importance, Cheshire LBAP | 6000 | 6(6) |
| Stock dove | <i>Columba oenas</i> | Amber List | 1 | 2(6) |
| Teal | <i>Anas crecca</i> | Amber List | 1 | 1(6) |

Wimboldsley to Stanthorne (WB1_AT04)

3.4.12 Five survey visits were carried out at Wimboldsley to Stanthorne between 28 September 2017 and 11 January 2018. In total, 33 bird species were recorded during the surveys, of which 12 are notable.

3.4.13 Table 35 provides a summary of notable species recorded.

Table 35: Notable wintering bird survey records from Wimboldsley to Stanthorne (WB1_AT04)

| Common name | Scientific name | Status | Maximum count of individuals during the survey period | Number of survey visits during which the species were recorded (out of the total) |
|-------------------------|-----------------------------------|---|---|---|
| Black-headed gull | <i>Chroicocephalus ridibundus</i> | Amber List | 25 | 3(5) |
| Dunnock | <i>Prunella modularis</i> | Amber List, Species of Principal Importance | 1 | 1(5) |
| Fieldfare | <i>Turdus pilaris</i> | Schedule 1, RBBP, Red List | 30 | 1(5) |
| Great black-backed gull | <i>Larus marinus</i> | Amber List | 1 | 1(5) |
| Grey wagtail | <i>Motacilla cinerea</i> | Red List | 1 | 1(5) |
| House sparrow | <i>Passer domesticus</i> | Red List, Species of Principal | 20 | 4(5) |

Background Information and Data
 Ecology and biodiversity
 BID EC-009-00001
 Ecological baseline data – breeding and wintering birds

| Common name | Scientific name | Status | Maximum count of individuals during the survey period | Number of survey visits during which the species were recorded (out of the total) |
|--------------------------|---------------------------|--|---|---|
| | | Importance, Cheshire LBAP | | |
| Kestrel | <i>Falco tinnunculus</i> | Amber List | 1 | 1(5) |
| Lesser black-backed gull | <i>Larus fuscus</i> | Amber List | 30 | 3(5) |
| Mallard | <i>Anas platyrhynchos</i> | Amber List | 5 | 3(5) |
| Mistle thrush | <i>Turdus viscivorus</i> | Red List | 6 | 3(5) |
| Song thrush | <i>Turdus philomelos</i> | Red List, Species of Principal Importance, Cheshire LBAP | 4 | 1(5) |
| Starling | <i>Sturnus vulgaris</i> | Red List, Species of Principal Importance, Cheshire LBAP | 700 | 3(5) |

Greenheyes Farm to Davenham Road (WB1_AT05)

- 3.4.14 Six survey visits were carried out at Greenheyes Farm to Davenham Road between 20 October 2017 and February 2018, with an additional survey on 28 September 2018. In total, 40 bird species were recorded during the surveys, of which 15 are notable.
- 3.4.15 Table 36 provides a summary of notable species recorded.

Table 36: Notable wintering bird survey records from Greenheyes Farm to Davenham Road (WB1_AT05)

| Common name | Scientific name | Status | Maximum count of individuals during the survey period | Number of survey visits during which the species were recorded (out of the total) |
|--------------------------|-----------------------------------|--|---|---|
| Black-headed gull | <i>Chroicocephalus ridibundus</i> | Amber List | 70 | 5(6) |
| Curlew | <i>Numenius arquata</i> | Red List, Species of Principal Importance | 3 | 1(6) |
| Duncock | <i>Prunella modularis</i> | Amber List, Species of Principal Importance | 1 | 1(6) |
| Fieldfare | <i>Turdus pilaris</i> | Schedule 1, RBBP, Red List | 1 | 1(6) |
| House sparrow | <i>Passer domesticus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 5 | 2(6) |
| Kestrel | <i>Falco tinnunculus</i> | Amber List | 1 | 2(6) |
| Kingfisher | <i>Alcedo atthis</i> | Annex 1, Schedule 1, Amber List | 1 | 4(6) |
| Lapwing | <i>Vanellus vanellus</i> | Red List, Species of Principal, Cheshire LBAP | 100 | 1(6) |
| Lesser black-backed gull | <i>Larus fuscus</i> | Amber List | 250 | 3(6) |

Background Information and Data

Ecology and biodiversity

BID EC-009-00001

Ecological baseline data – breeding and wintering birds

| Common name | Scientific name | Status | Maximum count of individuals during the survey period | Number of survey visits during which the species were recorded (out of the total) |
|---------------|----------------------------|--|---|---|
| Mallard | <i>Anas platyrhynchos</i> | Amber List | 20 | 4(6) |
| Mistle thrush | <i>Turdus viscivorus</i> | Red List | 7 | 3(6) |
| Mute swan | <i>Cygnus olor</i> | Amber List, | 4 | 5(6) |
| Snipe | <i>Gallinago gallinago</i> | Amber List | 7 | 1(6) |
| Song thrush | <i>Turdus philomelos</i> | Red List, Species of Principal Importance, Cheshire LBAP | 2 | 1(6) |
| Starling | <i>Sturnus vulgaris</i> | Red List, Species of Principal Importance, Cheshire LBAP | 500 | 4(6) |

Davenham Road to Cooke's Lane (WB1_BT01)

3.4.16 Five survey visits were carried out at Davenham Road to Cooke's Lane between 24 October 2017 and 5 February 2018. In total, 37 bird species were recorded during the surveys, of which 16 are notable. Note that access was not available to land parcels L5344 and L5424 on visits 1 and 3, and to land parcel L6247 on visit 1.

3.4.17 Table 37 provides a summary of notable species recorded.

Table 37: Notable wintering bird survey records from Davenham Road to Cooke's Lane (WB1_BT01)

| Common name | Scientific name | Status | Maximum count of individuals during the survey period | Number of survey visits during which the species were recorded (out of the total) |
|-------------------------|-----------------------------------|--|---|---|
| Black-headed gull | <i>Chroicocephalus ridibundus</i> | Amber List | 200 | 5(5) |
| Bullfinch | <i>Pyrrhula pyrrhula</i> | Amber List, Species of Principal Importance, Cheshire LBAP | 1 | 1(5) |
| Curlew | <i>Numenius arquata</i> | Red List, Species of Principal Importance | 35 | 2(5) |
| Dunnock | <i>Prunella modularis</i> | Amber List, Species of Principal Importance | 1 | 4(5) |
| Fieldfare | <i>Turdus pilaris</i> | Schedule 1, RBBP, Red List | 100 | 4(5) |
| Great black-backed gull | <i>Larus marinus</i> | Amber List | 15 | 1(5) |
| Herring gull | <i>Larus argentatus</i> | Red List, Species of Principal Importance | 2 | 1(5) |
| House sparrow | <i>Passer domesticus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 3 | 1(5) |
| Kestrel | <i>Falco tinnunculus</i> | Amber List | 1 | 1(5) |
| Lapwing | <i>Vanellus vanellus</i> | Red List, Species of Principal | 300 | 3(5) |

Background Information and Data
 Ecology and biodiversity
 BID EC-009-00001
 Ecological baseline data – breeding and wintering birds

| Common name | Scientific name | Status | Maximum count of individuals during the survey period | Number of survey visits during which the species were recorded (out of the total) |
|--------------------------|---------------------------|--|---|---|
| | | Importance, Cheshire LBAP | | |
| Lesser black-backed gull | <i>Larus fuscus</i> | Amber List | 20 | 5(5) |
| Linnet | <i>Linaria cannabina</i> | Red List, Species of Principal Importance, Cheshire LBAP | 25 | 3(5) |
| Mallard | <i>Anas platyrhynchos</i> | Amber List | 6 | 3(5) |
| Redwing | <i>Turdus iliacus</i> | Schedule 1, RBBP, Red List | 20 | 4(5) |
| Song thrush | <i>Turdus philomelos</i> | Red List, Species of Principal Importance, Cheshire LBAP | 1 | 3(5) |
| Starling | <i>Sturnus vulgaris</i> | Red List, Species of Principal Importance, Cheshire LBAP | 60 | 5(5) |

Broken Cross to Fieldhouse Farm (WB1_BT02a)

3.4.18 Five survey visits were carried out at Broken Cross to Fieldhouse Farm between 25 October 2017 and 6 February 2018. In total, 52 bird species were recorded during the surveys, of which 29 are notable.

3.4.19 Table 38 provides a summary of notable species recorded.

Table 38: Notable wintering bird survey records from Broken Cross to Fieldhouse Farm (WB1_BT02a)

| Common name | Scientific name | Status | Maximum count of individuals during the survey period | Number of survey visits during which the species were recorded (out of the total) |
|-------------------------|-----------------------------------|--|---|---|
| Black-headed gull | <i>Chroicocephalus ridibundus</i> | Amber List | 150 | 5(5) |
| Common gull | <i>Larus canus</i> | Amber List | 1 | 1(5) |
| Corn bunting | <i>Emberiza calandra</i> | Red List, Species of Principal Importance, Cheshire LBAP | 3 | 1(5) |
| Curlew | <i>Numenius arquata</i> | Red List, Species of Principal Importance | 120 | 2(5) |
| Dunlin | <i>Calidris alpina</i> | Amber List | 40 | 2(5) |
| Dunnock | <i>Prunella modularis</i> | Amber List, Species of Principal Importance | 1 | 3(5) |
| Fieldfare | <i>Turdus pilaris</i> | Schedule 1, RBBP, Red List | 44 | 2(5) |
| Gadwall | <i>Anas strepera</i> | Amber List | 3 | 1(5) |
| Golden plover | <i>Pluvialis apricaria</i> | Annex 1 | 150 | 3(5) |
| Great black-backed gull | <i>Larus marinus</i> | Amber List | 20 | 3(5) |
| Herring gull | <i>Larus argentatus</i> | Red List, Species of Principal | 10 | 3(5) |

Background Information and Data
 Ecology and biodiversity
 BID EC-009-00001
 Ecological baseline data – breeding and wintering birds

| Common name | Scientific name | Status | Maximum count of individuals during the survey period | Number of survey visits during which the species were recorded (out of the total) |
|--------------------------|----------------------------|---|---|---|
| | | Importance | | |
| House sparrow | <i>Passer domesticus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 50 | 5(5) |
| Kestrel | <i>Falco tinnunculus</i> | Amber List | 2 | 4(5) |
| Lapwing | <i>Vanellus vanellus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 500 | 5(5) |
| Lesser black-backed gull | <i>Larus fuscus</i> | Amber List | 150 | 5(5) |
| Linnet | <i>Linaria cannabina</i> | Red List, Species of Principal Importance, Cheshire LBAP | 50 | 4(5) |
| Mallard | <i>Anas platyrhynchos</i> | Amber List | 2 | 2(5) |
| Meadow pipit | <i>Anthus pratensis</i> | Amber List | 20 | 5(5) |
| Mistle thrush | <i>Turdus viscivorus</i> | Red list | 1 | 1(5) |
| Peregrine | <i>Falco peregrinus</i> | Annex 1, Schedule 1, RBBP, Cheshire scarce migrant and winter visitor | 1 | 1(5) |
| Redshank | <i>Tringa totanus</i> | Amber List | 1 | 1(5) |
| Redwing | <i>Turdus iliacus</i> | Schedule 1, RBBP, Red List | 10 | 2(5) |
| Shelduck | <i>Tadorna tadorna</i> | Amber List | 8 | 4(5) |
| Shoveler | <i>Anas clypeata</i> | RBBP, Amber List | 12 | 2(5) |
| Snipe | <i>Gallinago gallinago</i> | Amber List | 15 | 2(5) |
| Song thrush | <i>Turdus philomelos</i> | Red List, Species of Principal Importance, Cheshire LBAP | 1 | 1(5) |
| Starling | <i>Sturnus vulgaris</i> | Red List, Species of Principal Importance, Cheshire LBAP | 150 | 5(5) |
| Teal | <i>Anas crecca</i> | Amber List | 5 | 2(5) |
| Yellowhammer | <i>Emberiza citrinella</i> | Red List, Species of Principal Importance, Cheshire LBAP | 1 | 1(5) |

Fieldhouse Farm to Pickmere (WB1_BT02b)

- 3.4.20 Five survey visits were carried out at Fieldhouse Farm to Pickmere between 25 October 2017 and 7 February 2018. In total, 45 bird species were recorded during the surveys, of which 20 are notable.
- 3.4.21 Table 39 provides a summary of notable species recorded.

Background Information and Data

Ecology and biodiversity

BID EC-009-00001

Ecological baseline data – breeding and wintering birds

Table 39: Notable wintering bird survey records from Fieldhouse Farm to Pickmere (WB1_BT02b)

| Common name | Scientific name | Status | Maximum count of individuals during the survey period | Number of survey visits during which the species were recorded (out of the total) |
|-------------------|--------------------------------------|--|---|---|
| Black-headed gull | <i>Chroicocephalus ridibundus</i> | Amber List | 35 | 1(5) |
| Bullfinch | <i>Pyrrhula pyrrhula</i> | Amber List, Species of Principal Importance, Cheshire LBAP | 1 | 1(5) |
| Corn bunting | <i>Emberiza calandra</i> | Species of Principal Importance, Cheshire LBAP, Red list, Cheshire Scarce resident | 4 | 2(5) |
| Dunnock | <i>Prunella modularis</i> | Amber List, Species of Principal Importance | 1 | 2(5) |
| Fieldfare | <i>Turdus pilaris</i> | Schedule 1, RBBP, Red List | 20 | 3(5) |
| Grey wagtail | <i>Motacilla cinerea</i> | Red list | 1 | 2(5) |
| Hawfinch | <i>Coccothraustes coccothraustes</i> | RBBP, Species of Principal Importance, Red list, Cheshire Rare visitor | 1 | 1(1) |
| House sparrow | <i>Passer domesticus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 1 | 1(5) |
| Kestrel | <i>Falco tinnunculus</i> | Amber List | 1 | 1(5) |
| Lapwing | <i>Vanellus vanellus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 60 | 1(5) |
| Lesser redpoll | <i>Acanthis cabaret</i> | Red List, Species of Principal Importance | 2 | 2(5) |
| Mallard | <i>Anas platyrhynchos</i> | Amber List | 6 | 1(5) |
| Meadow pipit | <i>Anthus pratensis</i> | Amber List | 1 | 1(5) |
| Redwing | <i>Turdus iliacus</i> | Schedule 1, RBBP, Red List | 3 | 1(5) |
| Reed bunting | <i>Emberiza schoeniclus</i> | Amber List, Species of Principal Importance, Cheshire LBAP | 1 | 1(5) |
| Skylark | <i>Alauda arvensis</i> | Red List, Species of Principal Importance, Cheshire LBAP | 1 | 1(5) |
| Song thrush | <i>Turdus philomelos</i> | Red List, Species of Principal Importance, Cheshire LBAP | 1 | 1(5) |
| Starling | <i>Sturnus vulgaris</i> | Red List, Species of Principal Importance, Cheshire LBAP | 4 | 2(5) |
| Willow tit | <i>Poecile montana</i> | RBBP, Red List, Species of Principal Importance | 1 | 1(5) |
| Yellowhammer | <i>Emberiza citrinella</i> | Red List, Species of Principal Importance, Cheshire LBAP | 1 | 2(5) |

Pickmere to Agden and Hulseheath (MA03)

Tabley Grange to B5391 Pickmere Lane (WB1_BT08)

3.4.22 Four survey visits were carried out at Tabley Grange to B5391 Pickmere Lane between 9 October 2018 and 6 February 2019. In total, 50 bird species were recorded during the surveys, of which 21 are notable.

3.4.23 Table 40 provides a summary of notable species recorded.

Table 40: Notable wintering bird survey records from Tabley Grange to B5391 Pickmere Lane (WB1_BT08)

| Common name | Scientific name | Status | Maximum count of individuals during the survey period | Number of survey visits during which the species were recorded (out of the total) |
|--------------------------|-----------------------------------|--|---|---|
| Black-headed gull | <i>Chroicocephalus ridibundus</i> | Amber list | 250 | 2(5) |
| Corn bunting | <i>Emberiza calandra</i> | Species of Principal Importance, Cheshire LBAP, Red list | 2 | 1(5) |
| Dunnoek | <i>Prunella modularis</i> | Species of Principal Importance, Amber list | 1 | 2(5) |
| Fieldfare | <i>Turdus pilaris</i> | Schedule 1, RBBP, Red list | 60 | 3(5) |
| House sparrow | <i>Passer domesticus</i> | Species of Principal Importance, Cheshire LBAP, Red list | 6 | 2(5) |
| Kestrel | <i>Falco tinnunculus</i> | Amber list | 1 | 2(5) |
| Kingfisher | <i>Alcedo atthis</i> | Annex 1, Schedule 1, Amber list | 1 | 1(5) |
| Lapwing | <i>Vanellus vanellus</i> | Species of Principal Importance, Cheshire LBAP, Red list | 40 | 2(5) |
| Lesser black-backed gull | <i>Larus fuscus</i> | Amber list | 6 | 3(5) |
| Mallard | <i>Anas platyrhynchos</i> | Amber list | 18 | 5(5) |
| Meadow pipit | <i>Anthus pratensis</i> | Amber list | 2 | 2(5) |
| Mistle thrush | <i>Turdus viscivorus</i> | Red list | 5 | 5(5) |
| Mute swan | <i>Cygnus olor</i> | Amber list | 2 | 1(5) |
| Redwing | <i>Turdus iliacus</i> | Schedule 1, RBBP, Red list | 25 | 2(5) |
| Reed bunting | <i>Emberiza schoeniclus</i> | Species of Principal Importance, Cheshire LBAP, Amber list | 1 | 1(5) |
| Skylark | <i>Alauda arvensis</i> | Species of Principal Importance, Cheshire LBAP, | 1 | 1(5) |

Background Information and Data
 Ecology and biodiversity
 BID EC-009-00001
 Ecological baseline data – breeding and wintering birds

| Common name | Scientific name | Status | Maximum count of individuals during the survey period | Number of survey visits during which the species were recorded (out of the total) |
|--------------|--------------------------|--|---|---|
| | | Red list | | |
| Song thrush | <i>Turdus philomelos</i> | Species of Principal Importance, Cheshire LBAP, Red list | 6 | 3(5) |
| Sparrowhawk | <i>Accipiter nisus</i> | Annex 1 | 1 | 1(5) |
| Starling | <i>Sturnus vulgaris</i> | Species of Principal Importance, Cheshire LBAP, Red list | 250 | 4(5) |
| Teal | <i>Anas crecca</i> | Amber list | 4 | 1(5) |
| Tree sparrow | <i>Passer montanus</i> | Species of Principal Importance, Cheshire LBAP, Red list | 2 | 1(5) |

B5391 Pickmere Lane to Litley Farm (WB1_BT03)

3.4.24 Five survey visits were carried out at B5391 Pickmere Lane to Litley Farm between 26 October 2017 and 7 February 2018. In total, 42 bird species were recorded during the surveys at B5391 Pickmere Lane to Litley Farm, of which 16 are notable. Note that part of this transect was not accessible on visits 1 and 4. The transect on visit 3 was reduced to selected stopping points due to hazardous icy conditions.

3.4.25 Table 41 provides a summary of notable species recorded.

Table 41: Notable wintering bird survey records from B5391 Pickmere Lane to Litley Farm (WB1_BT03)

| Common name | Scientific name | Status | Maximum count of individuals during the survey period | Number of survey visits during which the species were recorded (out of the total) |
|--------------------------|---------------------------|--|---|---|
| Dunnock | <i>Prunella modularis</i> | Amber List, Species of Principal Importance | 2 | 5(5) |
| Fieldfare | <i>Turdus pilaris</i> | Schedule 1, RBBP, Red List | 15 | 4(5) |
| House sparrow | <i>Passer domesticus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 10 | 3(5) |
| Kestrel | <i>Falco tinnunculus</i> | Amber List | 1 | 1(5) |
| Lapwing | <i>Vanellus vanellus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 70 | 1(5) |
| Lesser black-backed gull | <i>Larus fuscus</i> | Amber List | 30 | 4(5) |
| Linnet | <i>Linaria cannabina</i> | Red List, Species of Principal Importance, Cheshire LBAP | 2 | 1(5) |
| Mallard | <i>Anas platyrhynchos</i> | Amber List | 6 | 2(5) |

Background Information and Data
 Ecology and biodiversity
 BID EC-009-00001
 Ecological baseline data – breeding and wintering birds

| Common name | Scientific name | Status | Maximum count of individuals during the survey period | Number of survey visits during which the species were recorded (out of the total) |
|---------------|----------------------------|--|---|---|
| Meadow pipit | <i>Anthus pratensis</i> | Amber List | 17 | 4(5) |
| Mistle thrush | <i>Turdus viscivorus</i> | Red List | 1 | 1(5) |
| Red grouse | <i>Lagopus lagopus</i> | Amber List, Species of Principal Importance | 2 | 1(5) |
| Redwing | <i>Turdus iliacus</i> | Schedule 1, RBBP, Red List | 40 | 5(5) |
| Skylark | <i>Alauda arvensis</i> | Red List, Species of Principal Importance, Cheshire LBAP | 20 | 1(5) |
| Snipe | <i>Gallinago gallinago</i> | Amber List | 15 | 1(5) |
| Song thrush | <i>Turdus philomelos</i> | Red List, Species of Principal Importance, Cheshire LBAP | 1 | 4(5) |
| Starling | <i>Sturnus vulgaris</i> | Red List, Species of Principal Importance, Cheshire LBAP | 200 | 5(5) |

Pownallgreen Farm to Hoo Green (WB1_BT04)

3.4.26 Five survey visits were carried out at Pownallgreen Farm to Hoo Green between 17 October 2017 and 9 February 2018. In total, 44 bird species were recorded during the surveys at Pownallgreen Farm to Hoo Green, of which 15 are notable.

3.4.27 Table 42 provides a summary of notable species recorded.

Table 42: Notable wintering bird survey records from Pownallgreen Farm to Hoo Green (WB1_BT04)

| Common name | Scientific name | Status | Maximum count of individuals during the survey period | Number of survey visits during which the species were recorded (out of the total) |
|--------------------------|-----------------------------------|--|---|---|
| Black-headed gull | <i>Chroicocephalus ridibundus</i> | Amber List | 4 | 1(5) |
| Bullfinch | <i>Pyrrhula pyrrhula</i> | Amber List, Species of Principal Importance, Cheshire LBAP | 2 | 4(5) |
| Dunnock | <i>Prunella modularis</i> | Amber List, Species of Principal Importance | 2 | 5(5) |
| Fieldfare | <i>Turdus pilaris</i> | Schedule 1, RBBP, Red List | 20 | 4(5) |
| Grey wagtail | <i>Motacilla cinerea</i> | Red List | 2 | 2(5) |
| House sparrow | <i>Passer domesticus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 9 | 5(5) |
| Kestrel | <i>Falco tinnunculus</i> | Amber List | 1 | 1(5) |
| Lesser black-backed gull | <i>Larus fuscus</i> | Amber List | 24 | 4(5) |
| Meadow pipit | <i>Anthus pratensis</i> | Amber List | 1 | 3(5) |
| Mistle thrush | <i>Turdus viscivorus</i> | Red List | 1 | 3(5) |

Background Information and Data

Ecology and biodiversity

BID EC-009-00001

Ecological baseline data – breeding and wintering birds

| Common name | Scientific name | Status | Maximum count of individuals during the survey period | Number of survey visits during which the species were recorded (out of the total) |
|-------------|--------------------------|--|---|---|
| Redwing | <i>Turdus iliacus</i> | Schedule 1, RBBP, Red List | 40 | 3(5) |
| Skylark | <i>Alauda arvensis</i> | Red List, Species of Principal Importance, Cheshire LBAP | 1 | 1(5) |
| Song thrush | <i>Turdus philomelos</i> | Red List, Species of Principal Importance, Cheshire LBAP | 1 | 5(5) |
| Starling | <i>Sturnus vulgaris</i> | Red List, Species of Principal Importance, Cheshire LBAP | 300 | 5(5) |
| Stock dove | <i>Columba oenas</i> | Amber List | 4 | 2(5) |

Betley Hurst Farm to Chapel Lane (WB1_BT12)

3.4.28 Five survey visits were carried out at Betley Hurst Farm to Chapel Lane between 20 November 2019 and 12 March 2020. In total, 28 bird species were recorded during the surveys at Betley Hurst Farm to Chapel Lane, of which 10 are notable.

3.4.29 Table 43 provides a summary of notable species recorded.

Table 43: Notable wintering bird survey records from Betley Hurst Farm to Chapel Lane (WB1_BT12)

| Common name | Scientific name | Status | Maximum count of individuals during the survey period | Number of survey visits during which the species were recorded (out of the total) |
|-------------------|-----------------------------------|--|---|---|
| Black-headed gull | <i>Chroicocephalus ridibundus</i> | Amber List | 46 | 1(4) |
| Fieldfare | <i>Turdus pilaris</i> | Schedule 1, RBBP, Red List | 100 | 3(4) |
| House sparrow | <i>Passer domesticus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 2 | 1(4) |
| Kestrel | <i>Falco tinnunculus</i> | Amber list | 1 | 1(4) |
| Mallard | <i>Anas platyrhynchos</i> | Amber List | 14 | 2(4) |
| Meadow pipit | <i>Anthus pratensis</i> | Amber List | 2 | 1(4) |
| Mistle thrush | <i>Turdus viscivorus</i> | Red List | 15 | 3(4) |
| Redwing | <i>Turdus iliacus</i> | Schedule 1, RBBP, Red List | 4 | 2(4) |
| Snipe | <i>Gallinago gallinago</i> | Amber List | 1 | 1(4) |
| Starling | <i>Sturnus vulgaris</i> | Species of Principal Importance, Cheshire LBAP, Red List | 100 | 3(4) |

Park Farm to Agden Brow (WB1_BT05)

3.4.30 Five survey visits were carried out at Park Farm to Agden Brow between 19 October 2017 and 15 February 2018. In total, 57 bird species were recorded during the surveys at Park Farm to Agden Brow, of which 25 are notable.

Background Information and Data
 Ecology and biodiversity
 BID EC-009-00001
 Ecological baseline data – breeding and wintering birds

3.4.31 Table 44 provides a summary of notable species recorded.

Table 44: Notable wintering bird survey records from Park Farm to Agden Brow (WB1_BT05)

| Common name | Scientific name | Status | Maximum count of individuals during the survey period | Number of survey visits during which the species were recorded (out of the total) |
|--------------------------|-----------------------------------|--|---|---|
| Black-headed gull | <i>Chroicocephalus ridibundus</i> | Amber List | 20 | 2(6) |
| Bullfinch | <i>Pyrrhula pyrrhula</i> | Amber List, Species of Principal Importance, Cheshire LBAP | 1 | 3(6) |
| Corn bunting | <i>Emberiza calandra</i> | Red List, Species of Principal Importance, Cheshire LBAP | 1 | 1(6) |
| Dunnock | <i>Prunella modularis</i> | Amber List, Species of Principal Importance | 4 | 5(6) |
| Fieldfare | <i>Turdus pilaris</i> | Schedule 1, RBBP, Red List | 40 | 3(6) |
| Golden plover | <i>Pluvialis apricaria</i> | Annex 1 | 1 | 1(6) |
| Green sandpiper | <i>Tringa ochropus</i> | Schedule 1, RBBP, Amber List | 1 | 1(6) |
| Grey partridge | <i>Perdix perdix</i> | Red List, Species of Principal Importance, Cheshire LBAP | 1 | 1(6) |
| House sparrow | <i>Passer domesticus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 10 | 5(6) |
| Kestrel | <i>Falco tinnunculus</i> | Amber list | 1 | 1(6) |
| Lapwing | <i>Vanellus vanellus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 300 | 4(6) |
| Lesser black-backed gull | <i>Larus fuscus</i> | Amber List | 2 | 1(6) |
| Mallard | <i>Anas platyrhynchos</i> | Amber List | 2 | 3(6) |
| Meadow pipit | <i>Anthus pratensis</i> | Amber List | 6 | 5(6) |
| Mistle thrush | <i>Turdus viscivorus</i> | Red List | 1 | 2(6) |
| Redwing | <i>Turdus iliacus</i> | Schedule 1, RBBP, Red List | 34 | 3(6) |
| Reed bunting | <i>Emberiza schoeniclus</i> | Amber List, Species of Principal Importance, Cheshire LBAP | 1 | 1(6) |
| Skylark | <i>Alauda arvensis</i> | Red List, Species of Principal Importance, Cheshire LBAP | 4 | 2(6) |
| Snipe | <i>Gallinago gallinago</i> | Amber List | 2 | 3(6) |
| Song thrush | <i>Turdus philomelos</i> | Red List, Species of Principal Importance, Cheshire LBAP | 2 | 5(6) |
| Starling | <i>Sturnus vulgaris</i> | Red List, Species of Principal Importance, Cheshire LBAP | 300 | 4(6) |
| Stock dove | <i>Columba oenas</i> | Amber List | 20 | 1(6) |
| Teal | <i>Anas crecca</i> | Amber List | 5 | 1(6) |
| Tree sparrow | <i>Passer montanus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 7 | 4(6) |

Background Information and Data

Ecology and biodiversity

BID EC-009-00001

Ecological baseline data – breeding and wintering birds

| Common name | Scientific name | Status | Maximum count of individuals during the survey period | Number of survey visits during which the species were recorded (out of the total) |
|--------------|----------------------------|--|---|---|
| Yellowhammer | <i>Emberiza citrinella</i> | Red List, Species of Principal Importance, Cheshire LBAP | 5 | 2(6) |

Chapel Lane to Agden Bridge Farm (WB1_BT13)

3.4.32 Five survey visits were carried out at Chapel Lane to Agden Bridge between 21 November 2019 and 12 March 2020. In total, 39 bird species were recorded during the surveys at Chapel Lane to Agden Bridge, of which 16 are notable. Table 45 provides a summary of notable species recorded.

Table 45: Notable wintering bird survey records from Chapel Lane to Agden Bridge Farm (WB1_BT13)

| Common name | Scientific name | Status | Maximum count of individuals during the survey period | Number of survey visits during which the species were recorded (out of the total) |
|--------------------------|-----------------------------------|--|---|---|
| Black-headed gull | <i>Chroicocephalus ridibundus</i> | Amber List | 40 | 4(5) |
| Corn bunting | <i>Emberiza calandra</i> | Species of Principal Importance, Cheshire LBAP, Red List | 1 | 1(5) |
| Duncock | <i>Prunella modularis</i> | Amber List, Species of Principal Importance | 2 | 2(5) |
| Fieldfare | <i>Turdus pilaris</i> | Schedule 1, RBBP, Red List | 12 | 3(5) |
| House sparrow | <i>Passer domesticus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 25 | 4(5) |
| Kestrel | <i>Falco tinnunculus</i> | Amber list | 1 | 3(5) |
| Lapwing | <i>Vanellus vanellus</i> | Species of Principal Importance, Cheshire LBAP, Red list | 1 | 2(5) |
| Lesser black-backed gull | <i>Larus fuscus</i> | Amber list | 8 | 1(5) |
| Mallard | <i>Anas platyrhynchos</i> | Amber List | 1 | 1(5) |
| Meadow pipit | <i>Anthus pratensis</i> | Amber List | 15 | 4(5) |
| Mistle thrush | <i>Turdus viscivorus</i> | Red list | 4 | 1(5) |
| Pink-footed goose | <i>Anser brachyrhynchus</i> | RBBP, Amber List | 45 | 2(5) |
| Redwing | <i>Turdus iliacus</i> | Schedule 1, RBBP, Red list | 60 | 2(5) |
| Skylark | <i>Alauda arvensis</i> | Species of Principal Importance, Cheshire LBAP, Red list | 1 | 1(5) |
| Song thrush | <i>Turdus philomenos</i> | Species of Principal | 1 | 2(5) |

Background Information and Data
 Ecology and biodiversity
 BID EC-009-00001
 Ecological baseline data – breeding and wintering birds

| Common name | Scientific name | Status | Maximum count of individuals during the survey period | Number of survey visits during which the species were recorded (out of the total) |
|-------------|-------------------------|--|---|---|
| | | Importance, Cheshire LBAP, Red list | | |
| Starling | <i>Sturnus vulgaris</i> | Species of Principal Importance, Cheshire LBAP, Red list | 50 | 4(5) |

Broomedge to Glazebrook (MA04)

Agden Brow to Bent Lane (WB1_DT01)

3.4.33 Five survey visits were carried out at Agden Brow to Bent Lane between 25 October 2017 and 6 February 2018. In total, 32 bird species were recorded during the surveys at Agden Brow to Bent Lane, of which 11 are notable.

3.4.34 Table 46 provides a summary of notable species recorded.

Table 46: Notable wintering bird survey records from Agden Brow to Bent Lane (WB1_DT01)

| Common name | Scientific name | Status | Maximum count of individuals during the survey period | Number of survey visits during which the species were recorded (out of the total) |
|--------------------------|-----------------------------------|--|---|---|
| Black-headed gull | <i>Chroicocephalus ridibundus</i> | Amber list | 62 | 4(5) |
| Dunnock | <i>Prunella modularis</i> | Amber List, Species of Principal Importance | 1 | 1(5) |
| Fieldfare | <i>Turdus pilaris</i> | Schedule 1, RBBP, Red List | 25 | 3(5) |
| Great black-backed gull | <i>Larus marinus</i> | Amber list | 7 | 2(5) |
| House sparrow | <i>Passer domesticus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 10 | 4(5) |
| Kestrel | <i>Falco tinnunculus</i> | Amber List | 1 | 2(5) |
| Lapwing | <i>Vanellus vanellus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 37 | 1(5) |
| Lesser black-backed gull | <i>Larus fuscus</i> | Amber List | 150 | 1(5) |
| Mallard | <i>Anas platyrhynchos</i> | Amber List | 6 | 5(5) |
| Mistle thrush | <i>Turdus viscivorus</i> | Red List | 3 | 4(5) |
| Starling | <i>Sturnus vulgaris</i> | Species of Principal Importance, Cheshire LBAP, Red list | 520 | 4(5) |

South of Holcroft Moss (WB1_DT06)

3.4.35 Five survey visits were carried out South of Holcroft Moss between 3 December 2019 and 11 March 2020. In total, 38 bird species were recorded during the surveys south of Holcroft Moss, of which 16 are notable.

3.4.36 Table 47 provides a summary of notable species recorded.

Table 47: Notable wintering bird survey records South of Holcroft Moss (WB1_DT06)

| Common name | Scientific name | Status | Maximum count of individuals during the survey period | Number of survey visits during which the species were recorded (out of the total) |
|--------------------------|----------------------------|--|---|---|
| Dunnoek | <i>Prunella modularis</i> | Amber List, Species of Principal Importance | 1 | 5(5) |
| Fieldfare | <i>Turdus pilaris</i> | Schedule 1, RBBP, Red List | 50 | 2(5) |
| Great black-backed gull | <i>Larus marinus</i> | Amber List | 5 | 4(5) |
| Greylag goose | <i>Anser anser</i> | Schedule 1, Amber List | 10 | 1(5) |
| House sparrow | <i>Passer domesticus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 10 | 5(5) |
| Kestrel | <i>Falco tinnunculus</i> | Amber List | 1 | 2(5) |
| Lesser black-backed gull | <i>Larus fuscus</i> | Amber list | 8 | 2(5) |
| Mallard | <i>Anas platyrhynchos</i> | Amber List | 2 | 1(5) |
| Mistle thrush | <i>Turdus viscivorus</i> | Red List | 3 | 2(5) |
| Redwing | <i>Turdus iliacus</i> | Schedule 1, RBBP, Red List | 100 | 2(5) |
| Skylark | <i>Alauda arvensis</i> | Species of Principal Importance, Cheshire LBAP, Red list | 1 | 2(5) |
| Snipe | <i>Gallinago gallinago</i> | Amber List | 12 | 4(5) |
| Song thrush | <i>Turdus philomelos</i> | Species of Principal Importance, Cheshire LBAP, Red list | 1 | 2(5) |
| Starling | <i>Sturnus vulgaris</i> | Species of Principal Importance, Cheshire LBAP, Red list | 45 | 3(5) |
| Tree sparrow | <i>Passer montanus</i> | Species of Principal Importance, Cheshire LBAP, Red list | 1 | 2(5) |
| Woodcock | <i>Scolopax rusticola</i> | Red list, Cheshire Scarce breeder, uncommon winter visitor | 1 | 2(5) |

Risley to Bamfurlong (MA05)

Pestfurlong to Culcheth (WB1_DT02)

3.4.37 Five survey visits were carried out at Pestfurlong to Culcheth between 26 October 2017 and 7 February 2018. In total, 35 bird species were recorded during the surveys at Pestfurlong to Culcheth, of which 14 are notable.

3.4.38 Table 48 provides a summary of notable species recorded.

Table 48: Notable wintering bird survey records from Pestfurlong to Culcheth (WB1_DT02)

| Common name | Scientific name | Status | Maximum count of individuals during the survey period | Number of survey visits during which the species were recorded (out of the total) |
|--------------------------|-----------------------------------|--|---|---|
| Black-headed gull | <i>Chroicocephalus ridibundus</i> | Amber list | 60 | 4(5) |
| Corn bunting | <i>Emberiza calandra</i> | Red list, Species of Principal Importance, Cheshire LBAP | 50 | 1(5) |
| Fieldfare | <i>Turdus pilaris</i> | Schedule 1, Red list | 150 | 2(5) |
| House sparrow | <i>Passer domesticus</i> | Red list, Species of Principal Importance, Cheshire LBAP | 10 | 4(5) |
| Kestrel | <i>Falco tinnunculus</i> | Amber list | 2 | 5(5) |
| Lapwing | <i>Vanellus vanellus</i> | Red list, Species of Principal Importance, Cheshire LBAP | 120 | 1(5) |
| Lesser black-backed gull | <i>Larus fuscus</i> | Amber list | 30 | 1(5) |
| Mallard | <i>Anas platyrhynchos</i> | Amber list | 48 | 5(5) |
| Mistle thrush | <i>Turdus viscivorus</i> | Red list | 1 | 4(5) |
| Mute swan | <i>Cygnus olor</i> | Amber list | 2 | 3(5) |
| Pochard | <i>Aythya ferina</i> | Red list | 5 | 1(5) |
| Snipe | <i>Gallinago gallinago</i> | Amber list | 1 | 1(5) |
| Starling | <i>Sturnus vulgaris</i> | Red list, Species of Principal Importance, Cheshire LBAP | 46 | 4(5) |
| Yellowhammer | <i>Emberiza citrinella</i> | Red list, Species of Principal Importance, Cheshire LBAP | 2 | 2(5) |

Golborne to Bamfurlong (WB1_DT03)

3.4.39 Five survey visits were carried out at Golborne to Bamfurlong between 30 October 2017 and 7 February 2018. In total, 37 bird species were recorded during the surveys at Golborne to Bamfurlong, of which 15 are notable.

3.4.40 Table 49 provides a summary of notable species recorded.

Background Information and Data
 Ecology and biodiversity
 BID EC-009-00001
 Ecological baseline data – breeding and wintering birds

Table 49: Notable wintering bird survey records from Golborne to Bamfurlong (WB1_DT03)

| Common name | Scientific name | Status | Maximum count of individuals during the survey period | Number of survey visits during which the species were recorded (out of the total) |
|--------------------------|-----------------------------------|--|---|---|
| Black-headed gull | <i>Chroicocephalus ridibundus</i> | Amber list | 116 | 4(5) |
| Great black-backed gull | <i>Larus marinus</i> | Amber list | 1 | 1(5) |
| House sparrow | <i>Passer domesticus</i> | Red list, Species of Principal Importance, Cheshire LBAP | 20 | 4(5) |
| Kestrel | <i>Falco tinnunculus</i> | Amber list | 1 | 5(5) |
| Lesser black-backed gull | <i>Larus fuscus</i> | Amber list | 15 | 2(5) |
| Mallard | <i>Anas platyrhynchos</i> | Amber list | 50 | 4(5) |
| Mistle thrush | <i>Turdus viscivorus</i> | Red list | 4 | 5(5) |
| Mute swan | <i>Cygnus olor</i> | Amber list | 4 | 5(5) |
| Reed bunting | <i>Emberiza schoeniclus</i> | Amber list, Species of Principal Importance, Cheshire LBAP | 15 | 1(5) |
| Short-eared owl | <i>Asio flammeus</i> | Annex 1, Amber list | 1 | 1(5) |
| Snipe | <i>Gallinago gallinago</i> | Amber list | 10 | 2(5) |
| Song thrush | <i>Turdus philomelos</i> | Red list, Species of Principal Importance, Cheshire LBAP | 1 | 1(5) |
| Starling | <i>Sturnus vulgaris</i> | Red list, Species of Principal Importance, Cheshire LBAP | 70 | 3(5) |
| Tawny owl | <i>Strix aluco</i> | Amber list | 1 | 1(5) |
| Yellowhammer | <i>Emberiza citrinella</i> | Red list, Species of Principal Importance, Cheshire LBAP | 1 | 1(5) |

Windy Bank Farm to Lily Lane (WB1_DT07)

3.4.41 Seven survey visits were carried out at Windy Bank Farm to Lily Lane between 16 October 2018 and 7 March 2019. In total, 64 bird species were recorded during the surveys at Windy Bank Farm to Lily Lane, of which 31 are notable. Note that access was restricted on visit 4 due to flooding of the footpath.

3.4.42 Table 50 provides a summary of notable species recorded.

Table 50: Notable wintering bird survey records from Windy Bank Farm to Lily Lane (WB1_DT07)

| Common name | Scientific name | Status | Maximum count of individuals during the survey period | Number of survey visits during which the species were recorded (out of the total) |
|-------------------|------------------------|---------------------------|---|---|
| Barn owl | <i>Tyto alba</i> | Schedule 1, Cheshire LBAP | 1 | 1(7) |
| Black-headed gull | <i>Chroicocephalus</i> | Amber List | 50 | 7(7) |

Background Information and Data

Ecology and biodiversity

BID EC-009-00001

Ecological baseline data – breeding and wintering birds

| Common name | Scientific name | Status | Maximum count of individuals during the survey period | Number of survey visits during which the species were recorded (out of the total) |
|--------------------------|-----------------------------|--|---|---|
| | <i>ridibundus</i> | | | |
| Bullfinch | <i>Pyrrhula pyrrhula</i> | Amber List, Species of Principal Importance, Cheshire LBAP | 2 | 2(7) |
| Cetti's warbler | <i>Cettia cetti</i> | Schedule 1 | 1 | 1(7) |
| Duncock | <i>Prunella modularis</i> | Amber List, Species of Principal Importance | 2 | 2(7) |
| Fieldfare | <i>Turdus pilaris</i> | Schedule 1, RBBP, Red List | 60 | 2(7) |
| Grey partridge | <i>Perdix perdix</i> | Red List, Species of Principal Importance, Cheshire LBAP | 8 | 2(7) |
| Grey wagtail | <i>Motacilla cinerea</i> | Red List | 1 | 2(7) |
| Greylag goose | <i>Anser anser</i> | Schedule 1, Amber List | 5 | 2(7) |
| House sparrow | <i>Passer domesticus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 10 | 1(7) |
| Kestrel | <i>Falco tinnunculus</i> | Amber List | 1 | 1(7) |
| Kingfisher | <i>Alcedo atthis</i> | Annex 1, Schedule 1, Amber List | 1 | 1(7) |
| Lapwing | <i>Vanellus vanellus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 20 | 1(7) |
| Lesser black-backed gull | <i>Larus fuscus</i> | Amber List | 30 | 6(7) |
| Linnet | <i>Linaria cannabina</i> | Red List, Species of Principal Importance, Cheshire LBAP | 1 | 1(7) |
| Mallard | <i>Anas platyrhynchos</i> | Amber List | 30 | 7(7) |
| Mistle thrush | <i>Turdus viscivorus</i> | Red List | 2 | 2(7) |
| Mute swan | <i>Cygnus olor</i> | Amber List | 6 | 7(7) |
| Pink-footed goose | <i>Anser brachyrhynchus</i> | RBBP, Amber List | 65 | 1(7) |
| Pochard | <i>Aythya ferina</i> | RBBP, Red List | 8 | 4(7) |
| Redwing | <i>Turdus iliacus</i> | Schedule 1, RBBP, Red List | 40 | 2(7) |
| Reed bunting | <i>Emberiza schoeniclus</i> | Amber List, Species of Principal Importance, Cheshire LBAP | 2 | 3(7) |
| Shelduck | <i>Tadorna tadorna</i> | Amber List | 3 | 2(7) |
| Shoveler | <i>Anas clypeata</i> | RBBP, Amber List | 12 | 3(7) |
| Snipe | <i>Gallinago gallinago</i> | Amber List | 1 | 1(7) |
| Song thrush | <i>Turdus philomelos</i> | Red List, Species of Principal Importance, Cheshire LBAP | 4 | 2(7) |
| Starling | <i>Sturnus vulgaris</i> | Red List, Species of Principal Importance, Cheshire LBAP | 30 | 4(7) |
| Stock dove | <i>Columba oenas</i> | Amber List | 2 | 1(7) |

Background Information and Data

Ecology and biodiversity

BID EC-009-00001

Ecological baseline data – breeding and wintering birds

| Common name | Scientific name | Status | Maximum count of individuals during the survey period | Number of survey visits during which the species were recorded (out of the total) |
|--------------|----------------------------|--|---|---|
| Teal | <i>Anas crecca</i> | Amber List | 12 | 1(7) |
| Wigeon | <i>Anas penelope</i> | RBBP, Amber List | 9 | 3(7) |
| Yellowhammer | <i>Emberiza citrinella</i> | Red List, Species of Principal Importance, Cheshire LBAP | 1 | 1(7) |

Hulseheath to Manchester Airport (MA06)

Ryecroft Farm to Mobberly Road (WB1_BT06)

3.4.43 Six survey visits were carried out at Ryecroft Farm to Mobberly Road between 10 October 2018 and 5 March 2019. In total, 51 bird species were recorded during the surveys at Ryecroft Farm to Mobberly Road, of which 24 are notable.

3.4.44 Table 51 provides a summary of notable species recorded.

Table 51: Notable wintering bird survey records from Ryecroft Farm to Mobberly Road (WB1_BT06)

| Common name | Scientific name | Status | Maximum count of individuals during the survey period | Number of survey visits during which the species were recorded (out of the total) |
|--------------------------|-----------------------------------|--|---|---|
| Black-headed gull | <i>Chroicocephalus ridibundus</i> | Amber List | 20 | 3(6) |
| Dunnock | <i>Prunella modularis</i> | Amber List, Species of Principal Importance | 1 | 5(6) |
| Fieldfare | <i>Turdus pilaris</i> | Schedule 1, RBBP, Red List | 25 | 2(6) |
| Goosander | <i>Mergus merganser</i> | Cheshire Uncommon winter visitor | 1 | 1(6) |
| Great black-backed gull | <i>Larus marinus</i> | Amber List | 1 | 1(6) |
| Grey wagtail | <i>Motacilla cinerea</i> | Red List | 1 | 1(6) |
| Greylag goose | <i>Anser anser</i> | Schedule 1, Amber List | 5 | 1(6) |
| House sparrow | <i>Passer domesticus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 12 | 3(6) |
| Kestrel | <i>Falco tinnunculus</i> | Amber List | 2 | 3(6) |
| Lesser black-backed gull | <i>Larus fuscus</i> | Amber List | 15 | 4(6) |
| Linnet | <i>Linaria cannabina</i> | Red List, Species of Principal Importance, Cheshire LBAP | 6 | 1(6) |
| Mallard | <i>Anas platyrhynchos</i> | Amber List | 120 | 6(6) |
| Meadow pipit | <i>Anthus pratensis</i> | Amber List | 5 | 2(6) |

Background Information and Data
 Ecology and biodiversity
 BID EC-009-00001
 Ecological baseline data – breeding and wintering birds

| Common name | Scientific name | Status | Maximum count of individuals during the survey period | Number of survey visits during which the species were recorded (out of the total) |
|----------------------|-----------------------------|--|---|---|
| Mistle thrush | <i>Turdus viscivorus</i> | Red List | 5 | 2(6) |
| Pink-footed goose | <i>Anser brachyrhynchus</i> | RBBP, Amber List | 57 | 1(6) |
| Redwing | <i>Turdus iliacus</i> | Schedule 1, RBBP, Red List | 1 | 2(6) |
| Reed bunting | <i>Emberiza schoeniclus</i> | Amber List, Species of Principal Importance, Cheshire LBAP | 1 | 2(6) |
| Ring-necked Parakeet | <i>Psittacula krameri</i> | Cheshire Scarce visitor | 3 | 1(6) |
| Skylark | <i>Alauda arvensis</i> | Red List, Species of Principal Importance, Cheshire LBAP | 2 | 2(6) |
| Song thrush | <i>Turdus philomelos</i> | Red List, Species of Principal Importance, Cheshire LBAP | 1 | 2(6) |
| Starling | <i>Sturnus vulgaris</i> | Red List, Species of Principal Importance, Cheshire LBAP | 3000 | 5(6) |
| Stock dove | <i>Columba oenas</i> | Amber List | 9 | 2(6) |
| Tree sparrow | <i>Passer montanus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 4 | 2(6) |
| Yellowhammer | <i>Emberiza citrinella</i> | Red List, Species of Principal Importance, Cheshire LBAP | 2 | 1(6) |

Booth Bank to Newhall Farm (WB1_BT07)

3.4.45 Five survey visits were carried out at Booth Bank to Newhall Farm between 9 October 2018 and 6 February 2019. In total, 51 bird species were recorded during the surveys at Booth Bank to Newhall Farm, of which 24 are notable.

3.4.46 Table 52 provides a summary of notable species recorded.

Table 52: Notable wintering bird survey records from Booth Bank to Newhall Farm (WB1_BT07)

| Common name | Scientific name | Status | Maximum count of individuals during the survey period | Number of survey visits during which the species were recorded (out of the total) |
|-------------------|-----------------------------------|--|---|---|
| Black-headed gull | <i>Chroicocephalus ridibundus</i> | Amber List | 120 | 5(5) |
| Common gull | <i>Larus canus</i> | Amber List | 2 | 1(5) |
| Corn bunting | <i>Emberiza calandra</i> | Red List, Species of Principal Importance, Cheshire LBAP | 75 | 2(5) |
| Dunnock | <i>Prunella modularis</i> | Amber List, Species of Principal Importance | 1 | 2(5) |

Background Information and Data

Ecology and biodiversity

BID EC-009-00001

Ecological baseline data – breeding and wintering birds

| Common name | Scientific name | Status | Maximum count of individuals during the survey period | Number of survey visits during which the species were recorded (out of the total) |
|--------------------------|----------------------------|--|---|---|
| Fieldfare | <i>Turdus pilaris</i> | Schedule 1, RBBP, Red List | 6 | 1(5) |
| Great black-backed gull | <i>Larus marinus</i> | Amber List | 1 | 1(5) |
| Grey wagtail | <i>Motacilla cinerea</i> | Red List | 1 | 1(5) |
| House sparrow | <i>Passer domesticus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 20 | 5(5) |
| Kestrel | <i>Falco tinnunculus</i> | Amber List | 1 | 3(5) |
| Lapwing | <i>Vanellus vanellus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 2 | 1(5) |
| Lesser black-backed gull | <i>Larus fuscus</i> | Amber List | 15 | 3(5) |
| Linnet | <i>Linaria cannabina</i> | Red List, Species of Principal Importance, Cheshire LBAP | 8 | 1(5) |
| Mallard | <i>Anas platyrhynchos</i> | Amber List | 2 | 2(5) |
| Meadow pipit | <i>Anthus pratensis</i> | Amber List | 6 | 2(5) |
| Mistle thrush | <i>Turdus viscivorus</i> | Red List | 4 | 4(5) |
| Redwing | <i>Turdus iliacus</i> | Schedule 1, RBBP, Red List | 13 | 2(5) |
| Skylark | <i>Alauda arvensis</i> | Red List, Species of Principal Importance, Cheshire LBAP | 8 | 1(5) |
| Snipe | <i>Gallinago gallinago</i> | Amber List | 1 | 1(5) |
| Song thrush | <i>Turdus philomelos</i> | Red List, Species of Principal Importance, Cheshire LBAP | 1 | 1(5) |
| Starling | <i>Sturnus vulgaris</i> | Red List, Species of Principal Importance, Cheshire LBAP | 25 | 4(5) |
| Stock dove | <i>Columba oenas</i> | Amber List | 12 | 2(5) |
| Tree sparrow | <i>Passer montanus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 10 | 2(5) |
| Yellowhammer | <i>Emberiza citrinella</i> | Red List, Species of Principal Importance, Cheshire LBAP | 8 | 1(5) |
| Yellow wagtail | <i>Motacilla flava</i> | Red List, Species of Principal Importance | 1 | 1(5) |

3.5 Vantage point surveys

Hough to Walley's Green (MA01)

Warmingham Moss (VP2_AV02)

3.5.1 Vantage point surveys were carried out at Warmingham Moss to collect additional information, on movements of birds and use of supporting habitats, in relation to Sandbach Flashes SSSI. Approximate height was recorded, but height banded observations were not made as these surveys do not relate to raised structures.

3.5.2 A total of 19 target species were recorded, these are summarised in Table 53.

Table 53: Target bird species recorded during wintering VP surveys at Warmingham Moss (VP2_AV02)

| Common name | Scientific name | Status | Number of birds – peak count | Activity and location in relation to the land required for the Proposed Scheme |
|-------------------------|-----------------------------------|---|------------------------------|--|
| Black-headed gull | <i>Chroicocephalus ridibundus</i> | Amber List | 200 | Peak count of birds recorded loafing in field 355m north-east. |
| Dunnock | <i>Prunella modularis</i> | Amber List, Species of Principal Importance | 1 | Single bird recorded flying west, 850m east and calling 550m north-east. |
| Fieldfare | <i>Turdus pilaris</i> | Schedule 1, RBBP, Red List | 40 | Within the land required for the construction of the Proposed Scheme, flying west. Smaller flocks recorded flying over arable land in all directions to the east. |
| Great black-backed gull | <i>Larus marinus</i> | Amber List | 8 | Single flock loafing on arable field approximately 726m east. |
| Grey partridge | <i>Perdix perdix</i> | Red List | 2 | Single pair recorded foraging at pond and field edge approximately 497m east. |
| Herring gull | <i>Larus argentatus</i> | Red List | 2 | Pair flying south-west over arable land immediately to the east. Two individuals flying south and south-west. |
| Kestrel | <i>Falco tinnunculus</i> | Amber List | 1 | Single bird seen foraging 470m east. Single bird flying south-west, 430m north-east and flying south and landing 670m north-east. Single bird seen foraging 650m north-east. Single bird seen flying south-east, 460m east. |

Background Information and Data

Ecology and biodiversity

BID EC-009-00001

Ecological baseline data – breeding and wintering birds

| Common name | Scientific name | Status | Number of birds – peak count | Activity and location in relation to the land required for the Proposed Scheme |
|--------------------------|-----------------------------|--|------------------------------|--|
| Lapwing | <i>Vanellus vanellus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 100 | Peak flock recorded flying south-east from within the land required for the construction of the Proposed Scheme. Additional flock of 80 birds also recorded and other single birds and pairs recorded infrequently. |
| Lesser black-backed gull | <i>Larus fuscus</i> | Amber List | 150 | Large flock displaying and flushed over arable field approximately 644m north-east. A total of 114 observations throughout survey area. |
| Mistle thrush | <i>Turdus viscivorus</i> | Red List | 5 | Peak flock observed flying over fields approximately 652m east. Three smaller flocks and two individuals also recorded. |
| Mallard | <i>Anas platyrhynchos</i> | Amber List | 21 | Peak flock flushed north-eastward from pond, 595m east. Ten groups of two to three birds also recorded, generally in flight in all directions. |
| Mute swan | <i>Cygnus olor</i> | Amber List | 5 | Peak flock observed flying west over arable fields approximately 511m east. Two pairs also recorded. |
| Pink-footed goose | <i>Anser brachyrhynchus</i> | Amber List | 60 | Single flock observed flying east out of the land required for the construction of the Proposed Scheme. |
| Redwing | <i>Turdus iliacus</i> | Schedule 1, RBBP, Red List | 1 | Single bird observed flying east, 575m east. |
| Snipe | <i>Gallinago gallinago</i> | Amber List | 1 | Single bird observed flying north-east from 655m north-east. |
| Song thrush | <i>Turdus philomelos</i> | Red List, Cheshire LBAP | 50 | Peak flock observed flying north over properties immediately adjacent to the land required for the construction of the Proposed Scheme. Other infrequent records of single birds. |
| Stock dove | <i>Columba oenas</i> | Amber List | 3 | Peak flock observed flying north over farmland approximately 432m east. Pairs and individual birds also recorded occasionally. |
| Starling | <i>Sturnus vulgaris</i> | Red List, Species of Principal | 100 | Peak flock observed foraging and loafing on arable field |

Background Information and Data

Ecology and biodiversity

BID EC-009-00001

Ecological baseline data – breeding and wintering birds

| Common name | Scientific name | Status | Number of birds – peak count | Activity and location in relation to the land required for the Proposed Scheme |
|-------------|--------------------|---------------------------|------------------------------|---|
| | | Importance, Cheshire LBAP | | approximately 229 m south-east. A total of 25 observations during surveys. |
| Teal | <i>Anas crecca</i> | Amber List | 5 | Single flock observed flying south-east over arable land approximately 852m east. |

Broomedge to Glazebrook (MA04)

Manchester Ship Canal (VP1_DV05)

3.5.3 Ten survey visits were carried out at the location of the Manchester Ship Canal viaduct between 14 November 2019 and 24 March 2020. A total of 15 target species were recorded during the surveys, with flights of 10 target species recorded that intersect the proposed structures at risk height of 0 to 40m. Table 54 provides a summary of flights of target species. The number of flights represents the number of birds in total, i.e. no attempt has been made to include flock sizes in the table, each bird in a flock being counted as a flight.

Table 54: Target bird species recorded during the wintering VP surveys at Manchester Ship Canal (VP1_DV05)

| Common name | Scientific name | Status | Number of birds (at all heights) | Number of flights recorded within potential risk height at the proposed rail alignment |
|---------------|---------------------------|---|----------------------------------|--|
| Fieldfare | <i>Turdus pilaris</i> | Schedule 1, RBBP, Red list | 399 | 326 |
| Gadwall | <i>Anas strepera</i> | Amber list | 8 | 0 |
| Garganey | <i>Anas querquedula</i> | Schedule 1, RBBP, Amber list | 2 | 0 |
| Grey wagtail | <i>Motacilla cinerea</i> | Red list | 8 | 3 |
| Herring gull | <i>Larus argentatus</i> | Species of Principal Importance, Red list | 1 | 1 |
| House sparrow | <i>Passer domesticus</i> | Species of Principal Importance, Cheshire LBAP, Red list | 6 | 0 |
| Lapwing | <i>Vanellus vanellus</i> | Species of Principal Importance, Cheshire LBAP, Red list | 1 | 1 |
| Mallard | <i>Anas platyrhynchos</i> | Amber list | 205 | 44 |
| Merlin | <i>Falco columbarius</i> | Annex 1, Schedule 1, RBBP, Red list, Cheshire Very scarce winter visitor, rare resident | 1 | 0 |
| Mistle thrush | <i>Turdus viscivorus</i> | Red list | 18 | 2 |
| Mute swan | <i>Cygnus olor</i> | Amber list | 94 | 6 |

Background Information and Data
 Ecology and biodiversity
 BID EC-009-00001
 Ecological baseline data – breeding and wintering birds

| Common name | Scientific name | Status | Number of birds (at all heights) | Number of flights recorded within potential risk height at the proposed rail alignment |
|-------------|--------------------------|--|----------------------------------|--|
| Redwing | <i>Turdus iliacus</i> | Schedule 1, RBBP, Red list | 113 | 111 |
| Song thrush | <i>Turdus philomelos</i> | Species of Principal Importance, Cheshire LBAP, Red list | 50 | 50 |
| Starling | <i>Sturnus vulgaris</i> | Species of Principal Importance, Cheshire LBAP, Red list | 120 | 120 |
| Wigeon | <i>Anas penelope</i> | RBBP, Amber list | 5 | 0 |

3.5.4 Other notable species recorded during the surveys included black-headed gull, bullfinch, common gull, kestrel, lesser black-backed gull and stock dove.

Risley to Bamfurlong (MA05)

Coffin Lane culvert (VP1_DV01)

3.5.5 Eight survey visits were carried out at the location of the Coffin Lane culvert between 23 October 2017 and 30 January 2018. A total of nine target species were recorded during the surveys, with flights of four target species recorded that intersect the proposed structures at risk height of 0 to 25m. Table 55 provides a summary of flights of target species. The number of flights represents the number of birds in total, i.e. no attempt has been made to include flock sizes in the table, each bird in a flock being counted as a flight.

Table 55: Target bird species recorded during the wintering VP surveys at Coffin Lane culvert (VP1_DV01)

| Common name | Scientific name | Status | Number of birds (at all heights) | Number of flights recorded within potential risk height at the proposed rail alignment |
|---------------|--------------------------|---|----------------------------------|--|
| Fieldfare | <i>Turdus pilaris</i> | Schedule 1, RBBP, Red list | 38 | 0 |
| Goosander | <i>Mergus merganser</i> | Cheshire Uncommon winter visitor, very scarce breeder | 1 | 1 |
| House sparrow | <i>Passer domesticus</i> | Species of Principal Importance, Cheshire LBAP, Red list | 1 | 0 |
| Lapwing | <i>Vanellus vanellus</i> | Species of Principal Importance, Cheshire LBAP, Red list | 1 | 0 |
| Marsh tit | <i>Poecile palustris</i> | Species of Principal Importance, Red list, Cheshire Scarce resident | 1 | 0 |

Background Information and Data

Ecology and biodiversity

BID EC-009-00001

Ecological baseline data – breeding and wintering birds

| Common name | Scientific name | Status | Number of birds (at all heights) | Number of flights recorded within potential risk height at the proposed rail alignment |
|---------------|----------------------------|--|----------------------------------|--|
| Mistle thrush | <i>Turdus viscivorus</i> | Red list | 140 | 34 |
| Mute swan | <i>Cygnus olor</i> | Amber List | 3 | 0 |
| Snipe | <i>Gallinago gallinago</i> | Amber List | 1 | 1 |
| Starling | <i>Sturnus vulgaris</i> | Red List, Species of Principal Importance, Cheshire LBAP | 650 | 169 |

3.5.6 Other notable species recorded during surveys included great black-backed gull, lesser black-backed gull, black-headed gull, kestrel, bullfinch, mallard and goosander.

Leeds and Liverpool Canal (VP2_DV02)

3.5.7 Vantage point surveys were carried out at Leeds and Liverpool Canal to collect additional information on movements of birds in relation to Bryn Marsh and Ince Moss SSSI. Approximate height was recorded, but height banded observations were not made as these do not relate to raised structures.

3.5.8 A total of 19 target species were recorded; these are summarised in Table 56.

Table 56: Target bird species recorded during the wintering VP surveys at Leeds and Liverpool Canal (VP2_DV02)

| Common name | Scientific name | Status | Number of birds – Peak count | Activity and location in relation to the land required for the construction of the Proposed Scheme |
|-------------------|-----------------------------------|--|------------------------------|--|
| Bullfinch | <i>Pyrrhula pyrrhula</i> | Amber list, Species of Principal Importance, Cheshire LBAP | 1 | Single bird flushed south from lake margin, approximately 700m west. |
| Black-headed gull | <i>Chroicocephalus ridibundus</i> | Amber List | 20 | Smaller flocks and individual birds recorded loafing within and flying over wetlands within 1km. |
| Fieldfare | <i>Turdus pilaris</i> | Schedule 1, RBBP, Red List | 35 | Large flock flying south-east over the Ince Moss flash approximately 408m from land required for the construction of the Proposed Scheme. |
| Greylag goose | <i>Anser anser</i> | Amber List | 2 | Two birds seen flying north over the Ince Moss flash, approximately 705m from the land required for the construction of the Proposed Scheme. Additional individual also seen on another visit. |
| Kingfisher | <i>Alcedo atthis</i> | Schedule 1, | 1 | Three separate observations seen |

Background Information and Data

Ecology and biodiversity

BID EC-009-00001

Ecological baseline data – breeding and wintering birds

| Common name | Scientific name | Status | Number of birds – Peak count | Activity and location in relation to the land required for the construction of the Proposed Scheme |
|--------------------------|------------------------------|--|------------------------------|--|
| | | Amber List | | over two visits utilising the available habitat with two using the canal and one the Ince Moss flash. All at least 480m away. |
| Lapwing | <i>Vanellus vanellus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 35 | Flock, seen approx. 365m from the land required for the construction of the Proposed Scheme flying south over the Ince Moss flash. |
| Lesser black-backed gull | <i>Larus fuscus</i> | Amber List | 10 | Flock seen approximately 500m from the land required for the construction of the Proposed Scheme flying east over the Ince Moss flash. Additional observations ranging from one to five birds on 10 other occasions. |
| Lesser redpoll | <i>Carduelis cabaret</i> | Red List | 60 | Moderate sized flock approximately 750m from the land required for the construction of the Proposed Scheme flying up and down on the water. Additional observation of five birds. |
| Marsh harrier | <i>Circus aeruginosus</i> | Schedule 1, Amber List | 1 | Individual seen approximately 900m from the land required for the construction of the Proposed Scheme getting mobbed by jackdaws and flying north-west. |
| Mallard | <i>Anas platyrhynchos</i> | Amber List | 55 | Large flock seen approximately 790m from the land required for the construction of the Proposed Scheme flying north-east over the canal. Additional observations of one to nine birds seen on 23 other occasions. |
| Mute swan | <i>Cygnus olor</i> | Amber List | 5 | Peak flock flew from the east and landed on Ince Moss approximately 630m from the land required for the construction of the Proposed Scheme. |
| Oystercatcher | <i>Haematopus ostralegus</i> | Amber List | 3 | Three birds seen flying east approximately 620m from the land required for the construction of the Proposed Scheme along the canal. |
| Pink-footed goose | <i>Anser brachyrhynchus</i> | Amber List | 90 | Flock of 90 birds seen flying south-east over Ince Moss towards the land required for the construction of the Proposed Scheme. Approximately 450m from the |

Background Information and Data
 Ecology and biodiversity
 BID EC-009-00001
 Ecological baseline data – breeding and wintering birds

| Common name | Scientific name | Status | Number of birds – Peak count | Activity and location in relation to the land required for the construction of the Proposed Scheme |
|-------------|----------------------------|--|------------------------------|--|
| | | | | land required for the construction of the Proposed Scheme. |
| Shelduck | <i>Tadorna tadorna</i> | Amber List | 1 | One bird took off from Ince Moss south of the canal and flew north approximately 945m from the land required for the construction of the Proposed Scheme. |
| Snipe | <i>Gallinago gallinago</i> | Amber List | 8 | Eight birds seen flying north-west over Ince Moss approximately 480m from the land required for the construction of the Proposed Scheme. |
| Song thrush | <i>Turdus philomelos</i> | Red List, Cheshire LBAP | 1 | One bird seen flying north-east across the canal approximately 455m from the land required for the construction of the Proposed Scheme. |
| Stock dove | <i>Columba oenas</i> | Amber List | 3 | Three birds seen flying south-west towards the canal approximately 365m away from the land required for the construction of the Proposed Scheme. Additional observation of one bird on the same visit. |
| Starling | <i>Sturnus vulgaris</i> | Red List, Species of Principal Importance, Cheshire LBAP | 1 | One bird flying north-east across the Ince Moss flash approximately 485m from the land required for the construction of the Proposed Scheme. |
| Teal | <i>Anas crecca</i> | Amber List | 9 | Flock of nine birds seen flying in from the west and landing on the Ince Moss flash approximately 695m from the land required for the construction of the Proposed Scheme. Additional observation of one bird during the same visit. |

Hulseheath to Manchester Airport (MA06)

Agden Brook Viaduct (VP1_BV05)

3.5.9 Ten survey visits were carried out at the location of Agden Brook Viaduct between 19 November 2019 and 24 March 2020. A total of 10 target species was recorded during the surveys, with flights of seven target species that intersect the proposed structures at risk height of 0 to 25m. Table 57 provides a summary of flights of target species. The number of

Background Information and Data

Ecology and biodiversity

BID EC-009-00001

Ecological baseline data – breeding and wintering birds

flights represents the number of birds in total, i.e. no attempt has been made to include flock sizes in the table, each bird in a flock being counted as a flight.

Table 57: Target bird species recorded during the wintering VP surveys at Agden Brook Viaduct (VP1_BV05)

| Common name | Scientific name | Status | Number of birds (at all heights) | Number of flights recorded within potential risk height at the proposed rail alignment |
|---------------|---------------------------|--|----------------------------------|--|
| Barn owl | <i>Tyto alba</i> | Schedule 1, Cheshire LBAP | 1 | 0 |
| Brent goose | <i>Branta bernicla</i> | Amber list | 4 | 4 |
| Fieldfare | <i>Turdus pilaris</i> | Schedule 1, RBBP, Red list | 240 | 133 |
| Herring gull | <i>Larus argentatus</i> | Species of Principal Importance, Red list | 6 | 6 |
| House sparrow | <i>Passer domesticus</i> | Species of Principal Importance, Cheshire LBAP, Red list | 1 | 0 |
| Mallard | <i>Anas platyrhynchos</i> | Amber list | 6 | 6 |
| Mistle thrush | <i>Turdus viscivorus</i> | Red list | 23 | 8 |
| Redwing | <i>Turdus iliacus</i> | Schedule 1, RBBP, Red list | 25 | 2 |
| Song thrush | <i>Turdus philomelos</i> | Species of Principal Importance, Cheshire LBAP, Red list | 2 | 0 |
| Starling | <i>Sturnus vulgaris</i> | Species of Principal Importance, Cheshire LBAP, Red list | 548 | 371 |

3.5.10 Other notable species recorded during surveys included black-headed gull, bullfinch, common gull, great black-backed gull, kestrel, lesser black-backed gull, meadow pipit, stock dove and tawny owl.

West of Rostherne Mere (VP2_BV03)

3.5.11 Vantage point surveys were carried out west of Rostherne Mere to collect additional information on movements of birds in relation to Rostherne Mere SSSI. Approximate height was recorded, but height banded observations were not made as these surveys do not relate to raised structures.

3.5.12 A total of 23 target species were recorded, these are summarised in Table 58.

Background Information and Data

Ecology and biodiversity

BID EC-009-00001

Ecological baseline data – breeding and wintering birds

Table 58: Target bird species recorded during the wintering VP surveys west of Rostherne Mere (VP2_BV03)

| Common name | Scientific name | Status | Number of birds – Peak count | Activity and location in relation to the land required for the construction of the Proposed Scheme |
|-------------------------|-----------------------------------|--|------------------------------|---|
| Black-headed gull | <i>Chroicocephalus ridibundus</i> | Amber List | 500+ | Peak flock flying west from Rostherne mere, 290m south. Additional flocks of 100, 205, 300. Total of 45 observations of this species. |
| Corn bunting | <i>Emberiza calandra</i> | Red List, Cheshire LBAP | 55 | Peak flock loafing 70m south-east. |
| Dunnock | <i>Prunella modularis</i> | Amber List, Species of Principal Importance | 4 | Peak flock observed loafing within farm area approximately 62m north. |
| Fieldfare | <i>Turdus pilaris</i> | Schedule 1, RBBP, Red List | 14 | Peak flock observed flying north within the land required for the construction of the Proposed Scheme. |
| Goldeneye | <i>Bucephala clangula</i> | Amber List | 6 | Single flock flushed south-east from within land required for the construction of the Proposed Scheme. |
| Great black-backed gull | <i>Larus marinus</i> | Amber List | 1 | Bird observed flying east through the land required for the construction of the Proposed Scheme. |
| Greylag goose | <i>Anser anser</i> | Amber List | 35 | Peak flock observed flying east within the land required for the construction of the Proposed Scheme. |
| Grey wagtail | <i>Motacilla cinerea</i> | Red List | 5 | Peak flock observed loafing and foraging in field approximately 128m east. |
| Herring gull | <i>Larus argentatus</i> | Red List | 1 | Individual birds flying over fields within 100m. |
| House sparrow | <i>Passer domesticus</i> | Red List, Cheshire LBAP | 10 | Flock observed loafing on property immediately adjacent to land required for the construction of the Proposed Scheme. |
| Kestrel | <i>Falco tinnunculus</i> | Amber List | 1 | Single bird observed on 5 occasions foraging both within and outside the land required for the construction of the Proposed Scheme. |
| Lapwing | <i>Vanellus vanellus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 200 | Peak flock flushed from field within 100m, and then flew north-west. Additional flocks of 70, 80 and |

Background Information and Data
 Ecology and biodiversity
 BID EC-009-00001
 Ecological baseline data – breeding and wintering birds

| Common name | Scientific name | Status | Number of birds – Peak count | Activity and location in relation to the land required for the construction of the Proposed Scheme |
|--------------------------|---------------------------|--|------------------------------|---|
| | | | | 130. |
| Lesser black-backed gull | <i>Larus fuscus</i> | Amber List | 7 | Peak flock observed flying south-east over woodland approximately 210m east. |
| Lesser redpoll | <i>Carduelis cabaret</i> | Red List | 20 | Peak flock observed flying eastwardly into land required for the construction of the Proposed Scheme. |
| Linnet | <i>Linaria cannabina</i> | Red List, Cheshire LBAP | 3 | Peak flock observed flying south-east into land required for the construction of the Proposed Scheme. |
| Meadow pipit | <i>Anthus pratensis</i> | Amber List | 6 | Peak flock observed foraging within and outside land required for the construction of the Proposed Scheme. |
| Mistle thrush | <i>Turdus viscivorus</i> | Red List | 4 | Peak flock observed loafing in hedgerow approximately 200m. |
| Mallard | <i>Anas platyrhynchos</i> | Amber List | 12 | Peak flock observed on waterbody within land required for the construction of the Proposed Scheme. |
| Mute swan | <i>Cygnus olor</i> | Amber List | 1 | Single bird in flight heading west adjacent to the land required for the construction of the Proposed Scheme. |
| Skylark | <i>Alauda arvensis</i> | Red List, Cheshire LBAP | 2 | Pairs within the land required for the construction of the Proposed Scheme flying south, 105m east. |
| Song thrush | <i>Turdus philomelos</i> | Red List, Cheshire LBAP | 60 | Peak flock flying south then east, 80m west. |
| Starling | <i>Sturnus vulgaris</i> | Red List, Species of Principal Importance, Cheshire LBAP | 30000+ | Peak flock roosting at Rostherne Mere, 500m south. |
| Stock Dove | <i>Columba oenas</i> | Amber List | 2 | Pairs observed flying over fields within 100m. |

Blackburn's Brook Viaduct (VP1_BV01)

3.5.13 Fourteen survey visits were carried out at the location of Blackburn's Brook Viaduct between 28 September 2018 and 21 March 2018. A total of 18 target species were recorded during the surveys with flights of eight target species that intersect the proposed structures at risk height of 0 to 25m. Table 59 provides a summary of flights of target species. The number of

Background Information and Data

Ecology and biodiversity

BID EC-009-00001

Ecological baseline data – breeding and wintering birds

flights represents the number of birds in total, i.e. no attempt has been made to include flock sizes in the table, each bird in a flock being counted as a flight.

Table 59: Target bird species recorded during the wintering VP surveys at Blackburn’s Brook Viaduct (VP1_BV01)

| Common name | Scientific name | Status | Number of birds (at all heights) | Number of flights recorded within potential risk height at the proposed rail alignment |
|-------------------|-----------------------------|---|----------------------------------|--|
| Fieldfare | <i>Turdus pilaris</i> | Schedule 1, RBBP, Red list | 25 | 8 |
| Grey wagtail | <i>Motacilla cinerea</i> | Red list | 9 | 6 |
| Greylag goose | <i>Anser anser</i> | Schedule 1, Amber List | 1 | 0 |
| Herring gull | <i>Larus argentatus</i> | Red List, Species of Principal Importance | 14 | 0 |
| House sparrow | <i>Passer domesticus</i> | Species of Principal Importance, Cheshire LBAP, Red list | 4 | 2 |
| Kingfisher | <i>Alcedo atthis</i> | Annex 1, Schedule 1, Amber List, | 3 | 3 |
| Lapwing | <i>Vanellus vanellus</i> | Red List, Species of Principal Importance, Cheshire LBAP | 191 | 0 |
| Lesser redpoll | <i>Acanthis cabaret</i> | Species of Principal Importance, Red list | 3 | 3 |
| Mallard | <i>Anas platyrhynchos</i> | Amber List | 5 | 0 |
| Marsh tit | <i>Poecile palustris</i> | Species of Principal Importance, Red list, Cheshire Scarce resident | 1 | 1 |
| Mistle thrush | <i>Turdus viscivorus</i> | Red list | 13 | 0 |
| Mute swan | <i>Cygnus olor</i> | Amber List, | 1 | 0 |
| Pink-footed goose | <i>Anser brachyrhynchus</i> | RBBP, Amber List | 55 | 0 |
| Redwing | <i>Turdus iliacus</i> | Schedule 1, RBBP, Red list | 64 | 28 |
| Shelduck | <i>Tadorna tadorna</i> | Amber List | 4 | 0 |
| Skylark | <i>Alauda arvensis</i> | Species of Principal Importance, Cheshire LBAP, Red list | 15 | 0 |
| Song thrush | <i>Turdus philomelos</i> | Species of Principal Importance, Cheshire LBAP, Red list | 11 | 0 |
| Starling | <i>Sturnus vulgaris</i> | Species of Principal Importance, Cheshire LBAP, Red list | 589 | 26 |

Other notable species recorded during the surveys included black-headed gull, bullfinch, dunnock, greater black-backed gull, lesser black-backed gull, kestrel, meadow pipit and stock dove.

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