Oxfordshire Highways

Cogges Link Road
Breeding Bird Survey

B0834600/Doc/CLR/24 April 2008

Jacobs Engineering UK Ltd, Jacobs House, 427 London Road, Reading, Berkshire, RG6 1BL UK
Tel 0118 963 5000 Fax 0118 949 1054

Document No	:	B0834600/Doc/PA/CLR/24
Revision No	:	01
Date	:	April 2008
Prepared by	:	Sarah Jennings
Checked by	:	Michael Jennings
Approved by	:	Jon Mullins

NB This document supersedes Doc No. 0009432/ES/2/23

Executive Summary

- This survey aimed to clarify the magnitude and significance of impact of the Cogges Link Road on breeding birds.
- Fifty species were recorded, of which 35 were considered to be breeding.
- Wren, blackbird, robin, blue tit, wood pigeon and chaffinch were the most commonly observed species.
- Populations of all species are considered to be of Parish/Neighbourhood importance at most.
- Hedgerows and scrub are the habitats supporting the greatest number of breeding birds in the study area, and they are considered to be of Parish/Neighbourhood importance.
- The River Windrush and adjacent marginal and tall herbaceous habitats are considered to be of District/Borough importance.
- Direct mortality may occur through destruction of nests during construction or road kill once in operation. To minimise risks, removal of bird habitat must be undertaken outside the breeding season and wide verges should be created either side of the road. These measures would ensure that there is no significant impact.
- Habitat loss would also be an important impact, and would be mitigated by hedgerow and woodland planting. This is considered to compensate for habitats lost, and medium to long term impacts are considered to be neutral as the vegetation matures.
- The road would create a barrier to the movement of some smaller and low-flying birds. This would be partially offset through the provision of new hedgerows and the net impact is predicted to be Neutral/Minor Negative.
- Disturbance and visual intrusion would occur both during construction and operation, with road noise considered to be the main impact in the long term. Replanting would mitigate most of the visual impacts, however would not reduce traffic noise and there would be some residual negative impact.
- The overall negative impact on breeding birds is considered to be of **Minor significance.**

Contents

1 Introduction

1.1 **Biology**

1.1.1 Over 500 species of birds have been recorded from Britain and Ireland and the list of species grows on an annual basis. However, only around half of these species can be described as regularly occurring 'British' birds. There are approximately 255 species of regularly occurring bird in the UK (Gooders, 1986). These species are either resident all year round, regular breeders, regular winter visitors or have been observed to pass through Britain on passage to other areas. These passage migrants may also be seen passing through a site or region in spring and autumn, on their way to their breeding and wintering grounds, respectively. The regularly occurring British bird species breed in nearly all types of terrestrial habitats, from bare ground through to woodland and urban habitats. As a result birds' nests may be found almost anywhere. The breeding season for the majority of species extends from late February through to July.

1.2 **Status**

1.2.1 All wild birds, their eggs and their nests are protected under the Wildlife and Countryside Act 1981, as amended (WCA). This makes it an offence to intentionally or recklessly:

- Kill, injure or take most species of wild bird;
- Take, damage or destroy their nests; or
- Take or destroy their eggs.

1.2.2 For those species included on Schedule 1 of the WCA, it is also an offence to disturb the adults while they are in and around their nest or their dependent young. Species included on Schedule 1 are those of high nature conservation priority or otherwise in greater need of legal protection.

1.2.3 Bird species of high conservation concern are Priority species in the UK Biodiversity Action Plan (HM Government 1995; 1998). Many of these species are considered to be Species of Principal Importance for the Conservation of Biodiversity (SPIs) in England under Section 74 of the Countryside and Rights of Way Act 2000. This places a duty on all government departments to have regard for the conservation of these species and on the Secretary of State to further, or promote others to further, the conservation of these species.

1.2.4 Separately, bird species of high conservation concern have been given 'Red List' status and bird species of medium conservation concern have been given 'Amber List' status (Gregory *et al*, 2002). For the more common and widespread species, the reason for inclusion on the red and amber lists is usually a significant decline in the UK breeding population or range in the 25 years preceding 2002. For Red List species this decline is greater than 50% and for Amber List species, between 25 and 50%. Other reasons for addition to the lists include 20% of the European breeding or non-breeding population

being found in the UK and 50% of the UK breeding or non-breeding population being restricted to 10 or less sites. Red and Amber List species are not necessarily the same as Schedule 1 species or Priority species in the UKBAP.

1.3 Summary of Previous Survey Information

1.3.1 A desk-top search for ecological records for the study area was sought from Oxfordshire Environmental Records Centre (now Thames Valley Environmental Records Centre). Records are included in Appendix 1.

1.4 Objectives and Limitations of Survey

1.4.1 The objectives of the survey were to:

- Identify the bird species present on the site;
- Record their approximate abundance and distribution throughout the site; and
- Provide the basis for assessing the magnitude and significance of the impact of the proposed Cogges Link Road (CLR).

1.4.2 The survey was carried out between the months of May and June inclusive, which is within the appropriate time of year to undertake breeding bird surveys.

1.4.3 The survey method incorporated birds recorded along the site boundary and in areas immediately adjacent to the site on the assumption that at least parts of these birds' territories extend into the site. This can lead to an over-estimate of the number of territories within the site.

1.4.4 Weather conditions were generally favourable for all of the four survey visits undertaken, and no surveys were carried out in significantly adverse weather conditions. Consequently, it is thought that the survey results provide a fair representation of the bird activity over the site during the breeding season.

2 Methodology

2.1 **Field Survey**

2.1.1 For territorial and semi-colonial species, the territory mapping method was used (Marchant 1983; Bibby et al, 1992) to estimate the numbers of territories of each species of bird breeding on the site. For other species, locations and numbers were recorded and totalled for the site as a whole.

2.1.2 The site was visited on four separate occasions during May and June 2003. On each occasion, the site was walked over and the location and species of all birds encountered was mapped. Additional information was recorded on bird activity using standard map symbols (Marchant, 1983).

2.1.3 Birds were considered to be breeding if active nests, pairs of birds or singing males were observed.

2.2 **Dates of Survey**

2.2.1 The surveys were undertaken on 15 May, 30 May, 25 June and 30 June 2003 between 05.00 and 12.00 hrs.

3 Findings

3.1 Bird Species

3.1.1 A complete species list and the numbers of territories recorded is shown in Appendix II of this report. The approximate territory locations for each species are shown in Appendix III.

3.1.2 A total of 50 species of birds were recorded from the site, of which 35 were considered to be breeding within or adjacent to the site and the remainder were simply foraging or passing over the area. Of the birds recorded at the site 10 are summer migrants to the area, namely, swift, house martin, swallow, willow warbler, blackcap, garden warbler, chiffchaff, sedge warbler, whitethroat and reed warbler.

3.1.3 Most frequently encountered were wren, blackbird, robin, blue tit, woodpigeon and chaffinch, while only single observations were made of garden warbler and, kingfisher. Congregations of starlings and house sparrows were associated with the housing developments of Cogges. Swifts, swallows and house martins formed feeding flocks over fields to the northeast of the site.

3.2 Bird Habitats

3.2.1 The study area is bounded by the A40 in the south, the developments of Witney and Cogges to the north and west and the B4022 to the northeast. Two large areas of grassland and arable fields occur to the east and west of the Cogges housing development. This urban habitat effectively bisects the study area. Stanton Marcourt Road runs north – south through Cogges and crosses the A40 at the central point of the study area.

3.2.2 Arable fields and improved grassland are the predominant terrestrial habitats. Some areas of tall herb fen are associated with the River Windrush. Mixed plantation woodland forms a screen to the A40 but woodland is a minor constituent of the overall habitat cover. Other terrestrial habitats include amenity grassland, scrubby species-poor semi-improved grassland, orchard, and dense scrubby field corners.

3.2.3 Hedgerows are typically tall and dominated by hawthorn *Crataegus monogyna*. Some double hedgerows occur in association with seasonal ditches and hedgerows with mature pedunculate oak trees *Quercus robur* are also present. Dead elm *Ulmus procera* is a frequently occurring constituent of many of the hedges.

3.2.4 The River Windrush winds through the western section of the study area and has associated riparian vegetation, including mature crack willow trees *Salix fragilis*. A small, seasonal pond is located in a scrubby field corner to the east of the study area. An area of reed mace bed has been established in a field to the west of the River Windrush, and was observed to support a singing male reed warbler.

3.2.5 A number of species were recorded foraging and holding territory in grassland habitats including blackbird, starling, swallow, house martin, swift, skylark and corvids (carrion crow, magpie and rook).

3.2.6 Species identified to be holding territory and foraging over arable land included house sparrow, yellowhammer, chaffinch, dunnock, red-legged partridge and rook.

3.2.7 Most of the species recorded within the site are associated with farmland, hedgerows, woodland blocks and scrub. These included blackbird, robin, wren, chaffinch and chiffchaff.

3.2.8 Sedge warblers were breeding in areas of tall herb fen to the west of the study area. Moorhens and mallards were observed to be rearing chicks on the River Windrush.

3.2.9 House sparrows and starlings were predominantly associated with the properties in the Cogges housing estates and formed congregations of greater than 30 birds. Swallows and house martins were observed to have nests in buildings associated with the Manor Farm Museum, which is located outside of the study area to the north of the site.

4 Evaluation

4.1 Basis for Evaluation

4.1.1 The basis of this evaluation is provided by the Institute of Ecology and Environmental Management (2006) guidelines. The guidelines provide a framework for valuing ecological receptors, such as sites, habitats and populations, on the following scale:

- International;
- National;
- Regional;
- County/Metropolitan;
- District/Borough;
- Local/Parish/Neighbourhood;
- Negligible.

4.1.2 In this assessment, both the populations of the individual species and the habitats with their bird communities are evaluated.

4.2 Bird Species

4.2.1 The site supports breeding populations of a range of common and widespread species as well as a number of species of conservation and legal significance as shown in Table 1. These birds are typical of the habitats present on the site and are likely to be present in comparable numbers and densities in similar farmland throughout rural Oxfordshire.

4.2.2 The birds of conservation significance recorded are all fairly common and widespread species that are undergoing a major or moderate decline in their populations but are not yet rare. The site is not considered to be of special importance for them and populations of all species found within the site are considered to be of Parish/Neighbourhood importance at most.

Table 1: Species with Conservation/Legal Significance.

English Name	Latin Name	Conservation Status*
Kingfisher	*Alcedo atthis*	WCA, Amber List
Skylark	*Alauda arvensis*	Red List; UKBAP Priority
Song Thrush	*Turdus philomelos*	Red List; UKBAP Priority
Starling	*Sturnus vulgaris*	Red List; UKBAP Priority
House Sparrow	*Passer domesticus*	Red List, UKBAP Priority
Bullfinch	*Pyrrhula pyrrhula*	Red List; UKBAP Priority
Reed Bunting	*Emberiza schoeniculus*	Red List; UKBAP Priority
Yellowhammer	*Emberiza citronella*	Red List, UKBAP Priority
Mute Swan	*Cygnus olor*	Amber List
Herring Gull	*Larus argentatus*	Amber List
Green Woodpecker	*Picus viridis*	Amber List
Swallow	*Hirundo rustica*	Amber List
House Martin	*Delichon urbica*	Amber List
Grey Wagtail	*Motacilla cinerea*	Amber List
Dunnock	*Prunella modularis*	Amber List
Mistle Thrush	*Turdus viscivorus*	Amber List
Willow Warbler	*Phylloscopus trochilus*	Amber List
Goldcrest	*Regulus regulus*	Amber List

***Conservation Status Notes**

Amber List/Red List = Birds of Conservation Concern 2002-2007. (RSPB, 2002).

UKBAP Priority = Priority Species of Conservation Concern (SOCC) as listed on the UKBAP (2007)

WCA = Birds subject to special legal protection as listed on Schedule 1 of the Wildlife and Countryside Act 1981.

4.3 Bird Habitats

4.3.1 The habitats present are largely typical of the surrounding countryside. The association between recorded breeding birds and these habitats is shown in Table 2.

Table 2: Habitats and Breeding Birds

Habitat	No. of Territories (Birds of Conservation and Legal Significance)	No. of Territories (all species)
Double hedgerows	2 territories, 2 species	35 territories, 11 species
Other hedgerows	14 territories, 5 species	130 territories, 16 species
Scrub	7 territories, 7 species	75 territories, 20 species
Mixed Plantation	3 territories, 1 species	30 territories, 10 species
Riparian Habitats	1 territories, 1 species	11 territories, 4 species
Tall Herb Fen	0 territories, 0 species	13 territories, 1 species
Reed Mace Bed	0 territories, 0 species	1 territory, 1 species
Arable	6 territories, 1 species	6 territories, 1 species
Grassland	2 territories, 1 species	2 territories, 1 species
Urban	10 territories, 1 species	13 territories, 3 species

4.3.2 Table 2 indicates that hedgerows and scrub are the most productive habitats for breeding birds within the study area, supporting the highest number of territories of birds of conservation significance and the highest number of territories and species overall. These habitats are of Parish/Neighbourhood importance.

4.3.3 Despite being the most abundant habitat on the site, improved grassland appears to support relatively few bird territories or species. Arable land supports a low diversity of bird species but does provide foraging opportunities for yellowhammers and territory for skylarks, both of which are Red List birds of Conservation Concern. These habitats are of Parish/Neighbourhood importance.

4.3.4 Areas of mixed plantation were outside of the main study area, and hence were not surveyed in such detail. However, the records indicate that this habitat was generally of low value to birds, perhaps due to proximity of the A40 and associated traffic noise.

4.3.5 The River Windrush is important for breeding moorhen, mallard, kingfisher and swan. Adjacent marginal and tall herbaceous habitats were of value to breeding sedge warblers. These habitats are of District/Borough importance.

4.3.6 Urban habitats provided refuges for two species, house sparrow and starling, that have undergone significant recent decline, leading to their inclusion on the RSPB Red List of Birds of Conservation Concern. Both of these species were recorded in good numbers in the urban habitats at the periphery of the study area.

5 Impact Assessment

5.1 Guidelines for Assessment

5.1.1 Without mitigation, impacts from the development on breeding birds may occur through direct mortality, habitat loss, habitat fragmentation, isolation and disturbance from noise and visual intrusion. Where impacts are an offence under wildlife law, they must be avoided. The terms used to describe impact magnitude follow Transport Analysis Guidance (TAG, 2004) guidelines. IEEM guidelines on ecological impact assessment (IEEM 2006) indicate negative impacts on features of local value are assessed to be of low significance, with a tendency to undervalue local biodiversity as a result of adopting this approach. In order to address this point, impacts will be assessed through consideration of local BAP plans and planning policies.

- Major Negative. The proposal (either on its own or with other proposals) may adversely affect the integrity of the site, in terms of the coherence of its ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and / or the population levels of species of interest
- Intermediate Negative. The site's integrity will not be adversely affected, but the effect on the site is likely to be significant in terms of its ecological objectives. If, in the light of full information, it cannot be clearly demonstrated that the proposal will not have an adverse effect on integrity, then the impact should be assessed as major negative.
- Minor Negative. Neither of the above apply, but some minor negative impact is evident
- Neutral. No observable impact in either direction
- Positive. Impacts which provide a net gain for wildlife overall.

5.2 Direct Mortality

5.2.1 Bird nests, eggs and nestlings may be destroyed during the construction phase of a development if their habitat is cleared during the breeding season. Such an action would be likely to constitute an offence under the Wildlife and Countryside Act 1981.

5.2.2 Birds may suffer increased mortality rates as the direct result of a new source of traffic through the area. Pigeons and game birds such as pheasants are commonly involved in vehicle collisions, as are corvids and birds of prey scavenging on road-kill. The risk of increased mortality arising from a new single carriageway road with a 40 to 50 mph speed limit road is considered to be Moderate and the impact Minor Negative.

5.3 Habitat Loss

5.3.1 The direct loss of hedgerow habitats is likely to have the greatest impact on bird territories, given the results shown in Table 2. The likely impact of the CLR on bird territories is shown in Table 3.

Table 3: Impact on Territories

Species	Number of Territories	Conservation Status
Blackbird	10	
Chaffinch	6	
Wren	5	
Greenfinch	4	
Robin	4	
Chiffchaff	3	
Great Tit	3	
Blue Tit	3	
Goldfinch	3	
Song Thrush	2	Red List; UKBAP Priority
Dunnock	2	Amber List
Blackcap	2	
Magpie	2	
Sedge Warbler	1	
Reed Bunting	1	Red List; UKBAP Priority
Mallard	1	
Kingfisher	1	WCA; Amber List
Reed Warbler	1	
Reed Bunting	1	Red List; UKBAP Priority
House Sparrow	1	Red List; UKBAP Priority

5.3.2 In the absence of mitigation, the effect of the proposed CLR on breeding bird habitats is considered to be Minor Negative.

5.4 Habitat Fragmentation and Isolation

5.4.1 The proposed scheme will present a new barrier to the movement of some, smaller and low-flying bird species such as wrens. This effect is increased where the road runs directly adjacent to the existing A40, thus effectively doubling the width of the barrier that birds would have to cross. Birds breeding on scrubby verges of the A40 would be effectively surrounded by roads at this location and might be deterred from breeding.

5.4.2 Some narrow parcels of grassland will be created between the eastern edge of the Cogges housing estate and the proposed road. These fields do not appear to be of great significance to breeding birds as habitat and thus the effect of this fragmentation is considered to be negligible. However, three well-established hedgerows supporting a good number of bird territories will be breached and effectively undergo a degree of fragmentation by the proposed scheme. The projected effect of this impact is regarded as Minor Negative.

5.5 Disturbance and Visual Intrusion

5.5.1 The construction of the development could cause disturbance to breeding birds through noise and visual intrusion, which are considered likely to have a Minor Negative but short-term impact on breeding birds. Common garden birds are likely to be less affected by this construction related disturbance than birds associated with quieter habitats, such as the yellowhammer.

5.5.2 Following construction, disturbance to breeding birds through noise and intrusion into the site by operatives and vehicles would cease. However, when the new road becomes operational there will be a raised level of background noise and associated disturbance. Research done in The Netherlands in 1994 [Journal of Applied Ecology. (1994:31, 95-101; 31, 85-94 and 32, 187-202)] indicates that the breeding success of a variety of common bird species is negatively affected by road-related noise. This includes a number of species relevant to this report, such as pheasant, great spotted woodpecker, garden warbler, wood warbler, goldcrest, magpie and chaffinch. The impact of road related noise is therefore considered to be Minor Negative in the long term.

6 Mitigation and Recommendations

6.1 **Direct Mortality.**

6.1.1 Where the removal of bird nesting habitat is required, specifically trees, shrubs and buildings, this should be undertaken outside of the bird breeding season (March to July inclusive). Phasing work in this way would prevent a breach of the WCA.

6.1.2 Barn owl presence in the study area has been established from historical records and a road traffic casualty was noted in the Shores Green area in June 2006 approximately 500 metres east of the study area boundary. This species uses wide and more open road verges to hunt. This behaviour results in road traffic accidents. However it should be noted that where large verges are present road-related bird mortality of the common species is reduced. Mortality of the common species is a more common occurrence where hedgerows directly overhang road schemes. Road design should encompass careful consideration for the design of road verges.

6.2 **Habitat Loss**

6.2.1 Tall, unmanaged hedgerows represent the most valuable nesting habitat for the vast majority of the birds on site. Over 85% of these hedgerows within the study area will remain unaffected by land take of the proposed road. Proposed on and off-line hedgerow replanting will amount to 1800 metres of habitat, of which 700 metres lies within the scheme boundary and 1100 metres would need landowner permission. Taking into account the projected losses of approximately 450 metres an overall hedgerow increase of 35% would be expected.

6.2.2 ‘Woodland plots’ will be created along much of the scheme length, and these will provide additional opportunities for nesting and foraging birds. Approximately 2.2 ha of ‘dry’ and 1.08 ha of ‘damp’ woodland will be created within the scheme boundaries. A further 1.9ha of dry woodland and 1.2 ha of damp woodland will be created outside of the scheme boundaries assuming that landowner agreement can be reached.

6.2.3 Species mixtures proposed for hedgerow and woodland planting includes native species that afford good nest sites and produce fruit and seeds palatable for birds. These species include oak *Quercus robur*, ash *Fraxinus excelsior*, alder *Alnus glutinosa*, goat willow *Salix caprea*, dogwood *Cornus sanguinea*, hazel *Corylus avellana*, hawthorn *Crataegus monogyna*, blackthorn *Prunus spinosa* and guelder rose *Viburnum opulus*.

6.2.4 Proposed aquatic habitat creation at three discrete locations may encourage greater use of the site by reed warbler, sedge warbler and reed bunting in particular.

6.2.5 A habitat management plan for the proposed new planting should be adopted to

optimise the use of these habitats by birds. This is particularly important for off-site planting, which needs to counteract the possible noise-related impact on bird fecundity associated with planting adjacent to the road corridor. The management plan should aim to achieve the following habitats that will be of benefit to the bird species, and particularly birds of conservation significance recorded from the site:

- Wide-based hedgerows. These should be created by double row planting, with cutting taking place a maximum of every two years.
- Some tall hedgerows with mature trees. Hedges in excess of 4 metres in height with frequent trees are of benefit to species such as bullfinch and song thrush in particular.
- Some tall hedgerows without mature trees. These hedgerows are favoured by species like the willow warbler and dunnock.
- Some medium and low hedgerows without mature trees (2 – 3 metres), which are preferred by yellowhammer and whitethroat.

6.3 Habitat Fragmentation and Isolation

6.3.1 The development is likely to have some negative fragmentation and isolation effects on breeding birds. This can be partially offset through the provision of new hedgerows, which may facilitate bird movement around the site.

6.4 Disturbance and Visual Intrusion

6.4.1 The proposed planting scheme will mitigate most of the visual impacts of the on-line road.

6.5 Further Survey

6.5.1 Whilst it is not considered necessary to undertake any further bird survey work to complete the environmental assessment, the survey method used is repeatable and quantitative. A repeat survey five years post-development would provide a valuable indication as to the actual impact of the development on breeding birds and the success of the mitigation measures. It is therefore recommended that this be undertaken.

7 Residual Impacts

7.1 Direct Mortality

7.1.1 If site clearance is avoided during the bird breeding season and the proposed verge and planting design is adopted, there should be no significant residual impact on bird mortality.

7.2 Habitat Loss

7.2.1 The losses of grassland and arable habitats are not considered to be significant impacts on bird usage of the site. The proposed hedgerow replanting will offset the losses required for construction of the scheme. New areas of woodland planting will afford new nesting and foraging habitats for a range of bird species. The road construction will entail almost complete loss of the amenity grassland south of Eton Close used by foraging starling and blackbird. The overall result of the habitat mitigation package should be Neutral in the medium to long term as the planted vegetation matures.

7.3 Habitat Fragmentation and Isolation

7.3.1 Following planned mitigation activities the net impact on breeding birds is predicted to be Neutral/Minor Negative.

7.4 Disturbance and Visual Intrusion

7.4.1 Disturbance during and following site construction may have a temporary adverse effect on birds more accustomed to lower levels of disturbance, such as Yellowhammer. Some reduction to the breeding success of birds in hedgerows adjacent the new road scheme might be expected to occur. This is likely to be dependent upon the traffic flow and associated level of traffic noise created. Traffic-related noise is unlikely to be significantly reduced by any of the planting, and some noise-related impact on breeding birds would be expected to remain.

7.4.2 For birds using the amenity grassland and associated urban areas the residual impact of the road would be Negative.

7.5 Overall Assessment

7.5.1 Overall, the site has habitats typical of the local area and supports a range of relatively abundant breeding birds characteristic of the surrounding countryside and the neighbouring urban area. The mature hedgerows on site support numerous breeding bird territories. Loss of sections of these hedgerows and road-related disturbance may have a Minor Negative effect on the breeding bird population, which is of Neighbourhood / Parish value. The significance of this ecological impact is therefore minor.

References

Bibby, C. J., Burgess, N. D. and Hill, D. A. (1992). Bird Census Techniques. Academic Press, London.

Gooders. (1986). Field Guide to the Birds of Britain and Ireland. Kingfisher

Gregory RD, Wilkinson NI, Noble DG, Robinson J A, Brown A F, Hughes J, Proctor DA, Gibbons DW and Galbraith CA (2002) Population status of birds in the UK - Birds of conservation concern: 2002-2007 British Birds 95 410 – 450.

HM Government (1995) Biodiversity: The UK Steering Group Volume 2: Action Plans. JNCC, Peterborough.

HM Government (1998) Tranche 2 Action Plans: Volumes I and II. English Nature, Peterborough.

IEEM. (2006). Guidelines for Ecological Impact Assessment

Journal of Applied Ecology. (1994:31, 95-101; 31, 85-94 and 32, 187-202).

Journal of Applied Ecology. (1994:31, 95-101; 31, 85-94 and 32, 187-202).

Marchant, J. H. (1983) BTO Common Bird Census Instructions. BTO, Thetford.

Department of Transport 2004 Transport Analysis Guidance (TAG) www.webtag.org.uk

.

Appendix I: Desktop Data

Common name	Date	Grid ref	Site
Kestrel	Pre 1982	SP360091	Witney Meadows Country Park
Water rail	Pre 1982	SP360091	Witney Meadows Country Park
Snipe	Pre 1982	SP360091	Witney Meadows Country Park
Redshank	Pre 1982	SP360091	Witney Meadows Country Park
Cuckoo	Pre 1982	SP360091	Witney Meadows Country Park
Kingfisher	Pre 1982	SP360091	Witney Meadows Country Park
Yellow wagtail	Pre 1982	SP360091	Witney Meadows Country Park
Grey wagtail	Pre 1982	SP360091	Witney Meadows Country Park
Willow warbler	Pre 1982	SP360091	Witney Meadows Country Park
Goldcrest	Pre 1982	SP360091	Witney Meadows Country Park
Reed bunting	Pre 1982	SP360091	Witney Meadows Country Park
Barn owl	15 June 1999	SP360085	Witney Lakes Country Park
Water rail	Pre-1982	SP360085	Witney Lakes Country Park
Curlew	Pre-1982	SP360085	Witney Lakes Country Park
Redshank	Pre-1982	SP360085	Witney Lakes Country Park
Kingfisher	Pre-1982	SP360085	Witney Lakes Country Park
Yellow wagtail	Pre-1982	SP360085	Witney Lakes Country Park
Grey wagtail	Pre-1982	SP360085	Witney Lakes Country Park
Stonechat	Pre-1982	SP360085	Witney Lakes Country Park
Reed bunting	Pre-1982	SP360085	Witney Lakes Country Park
Mute swan	3 Sept 1996	SP36610790	River Windrush
Mute swan	20 Sept 1996	SP36060973	River Windrush
Mute swan	20 Sept 1996	SP36130873	River Windrush
Kingfisher	20 Sept 1996	SP36060973	River Windrush
Kingfisher	20 Sept 1996	SP36090932	River Windrush
Song thrush	19 Sept 1996	SP36130873	River Windrush
Kingfisher	19 Sept 1996	SP35920965	River Windrush (West Branch)
kingfisher	19 Sept 1996	SP35930863	River Windrush (West Branch)

Records for Cogges Manor Farm and River Windrush to the north of the study corridor area have been omitted.

Appendix II: Complete Species List

Species	Territories/ Count
Black cap	11 territories
Blackbird	51 territories
Blue tit	40 territories
Bullfinch	3 territories
Carrion crow	peak count 4
Chaffinch	37 territories
Chiffchaff	22 territories
Collared dove	2 territories
Dunnock	2 territories
Feral pigeon	peak count 5
Garden warbler	1 territory
Gold crest	2 territories
Goldfinch	14 territories
Great spotted woodpecker	1 territory
Great tit	36 territories
Green woodpecker	1 territory
Greenfinch	25 territories
Grey wagtail	1 territory
Heron	1 territory
House martin	1 territory
House sparrow	10 territories
Jackdaw	1 colony
Kingfisher	1 territory
Long-tailed tit	7 territories

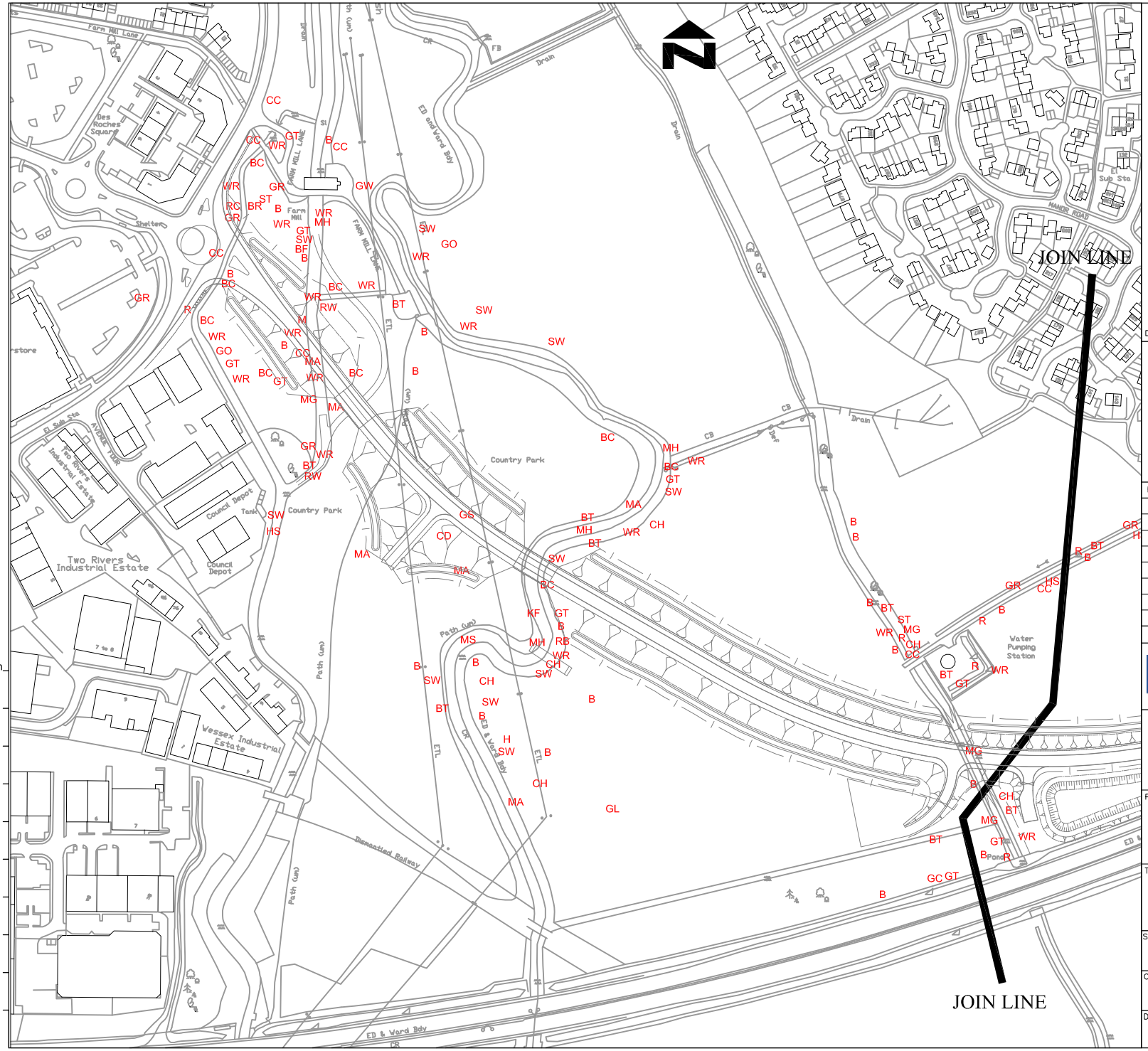
Species	Territories/ Count
Magpie	15 territories
Mallard	5 territories
Merlin	2 territories
Mistle thrush	1 territory
Moorhen	4 territories
Mute swan	1 territory
Pheasant	peak count 3
Red-legged partridge	peak count 2
Reed bunting	1 territory
Reed warbler	2 territories
Robin	33 territories
Rook	peak count 1
Sedge warbler	11 territories
Skylark	1 territory
Song thrush	4 territories
Starling	peak count 25
Swallow	1 colony
Swift	peak count 10
Tree creeper	1 territory
Whitethroat	5 territories
Willow warbler	4 territories
Wood pigeon	peak count 35
Wren	46 territories
Yellowhammer	7 territories

Appendix III: Bird Territory Maps

Key to territory maps

Abbreviation	Species
BC	Black cap
BC	Blackbird
BT	Blue tit
BF	Bullfinch
CH	Chaffinch
CC	Chiffchaff
CD	Collared dove
D	Dunnock
GW	Garden warbler
GC	Gold crest
GO	Goldfinch
GS	Great spotted woodpecker
GT	Great tit
G	Green woodpecker
GR	Greenfinch
GL	Grey wagtail
H	Heron
HM	House martin
HS	House sparrow
JD	Jackdaw

Abbreviation	Species
KF	Kingfisher
LT	Long-tailed tit
MG	Magpie
MA	Mallard
ML	Merlin
M	Mistle thrush
MH	Moorhen
MS	Mute swan
RB	Reed bunting
RW	Reed warbler
R	Robin
SW	Sedge warbler
S	Skylark
ST	Song thrush
SL	Swallow
TC	Tree creeper
WH	Whitethroat
WW	Willow warbler
WR	Wren
Y	Yellowhammer



10cm

Reproduced from the Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorized reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. 1000023343 (2007).

Do not scale this drawing

Rev	Description	By	Date	Chk'd	Apprd

Purpose of issue	Rev	Date	Apprd

JACOBS

Jacobs UK Ltd, Park House, Haddenham Business Park, Thame Road, Haddenham, Aylesbury, Bucks. HP17 8LB
Telephone (01844) 296200
FAX (01844) 296201

Oxfordshire Highways
www.oxfordshirehighways.org

Project

COGGES LINK ROAD

Title

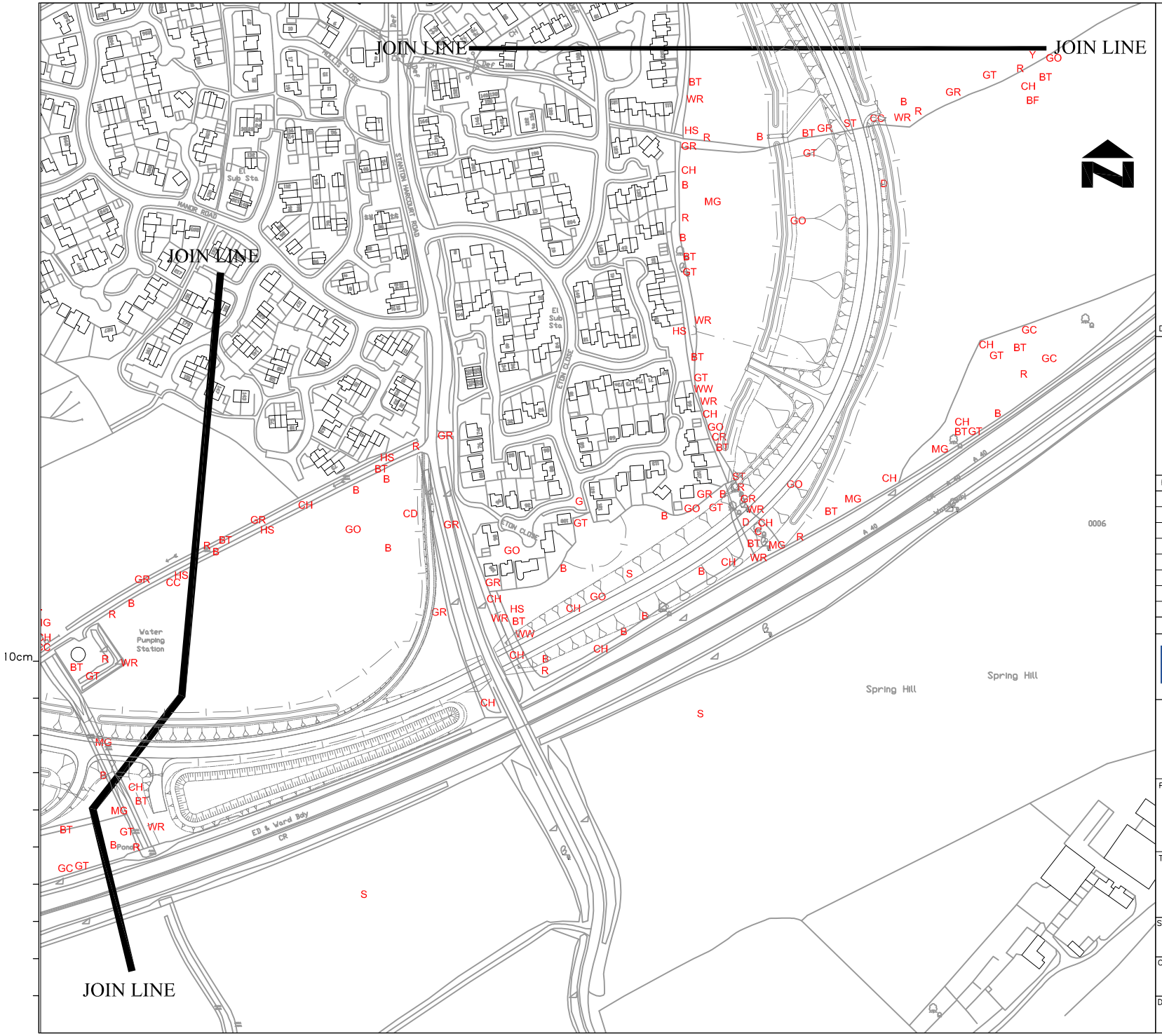
BREEDING BIRD SURVEY
SHEET 1 of 3

Scale	Drawn By	Checked By	Approved By
N.T.S.	ALB	MJ	JM
	Date 02.05.07	Date 20.03.08	Date 20.03.08

Clients Ref

Drawing Number B0834600/CLR/24/Fig 1

Rev



Do not scale this drawing

Rev	Description	By	Date	Chk'd	Apprd

Purpose of issue	Rev	Date	Apprd

JACOBS
Jacobs UK Ltd, Park House, Haddenham Business Park, Thame Road, Haddenham, Aylesbury, Bucks. HP17 8LB
Telephone (01844) 296200
FAX (01844) 296201

Oxfordshire Highways
www.oxfordshirehighways.org

Project

COGGES LINK ROAD

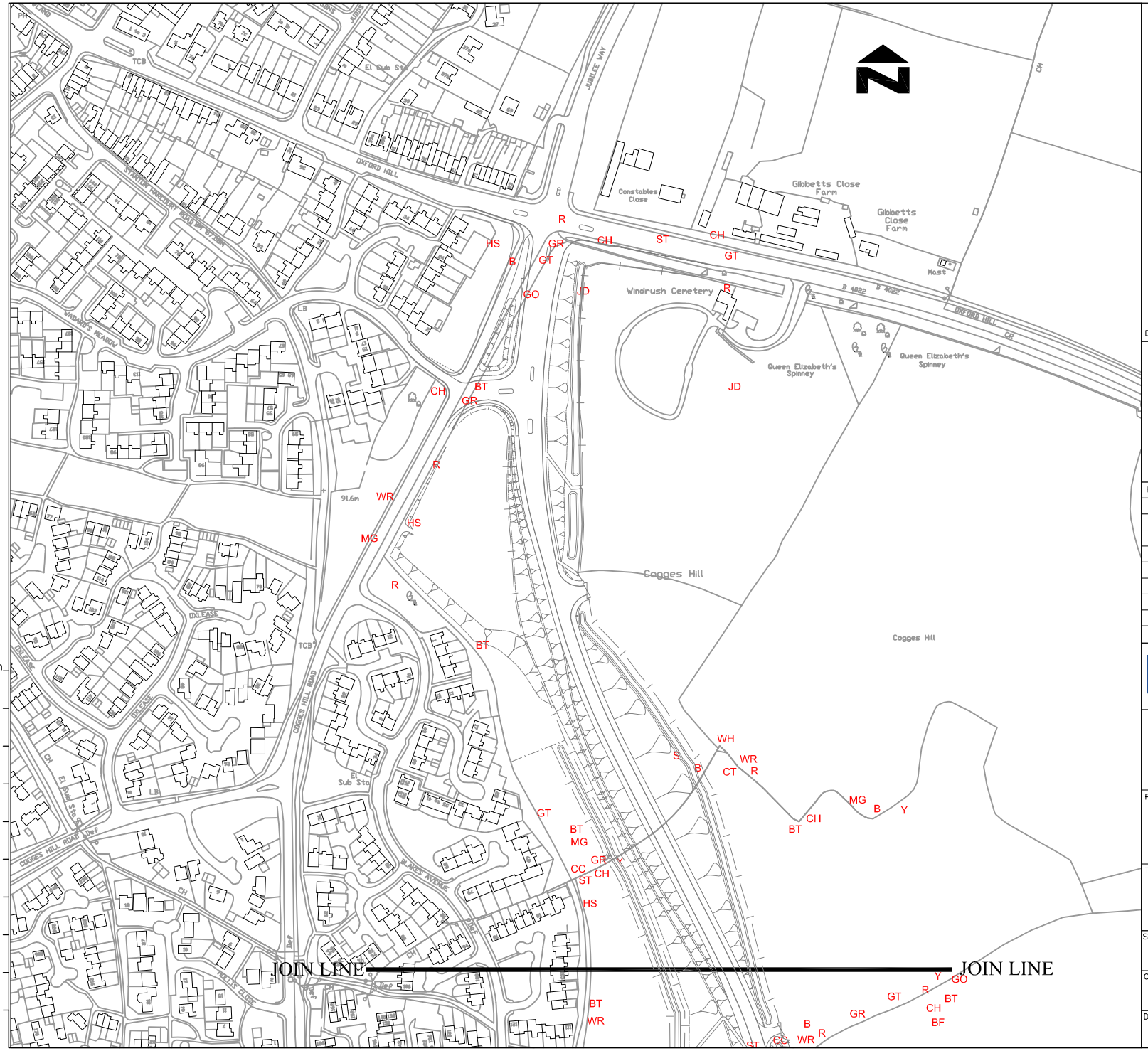
Title

BREEDING BIRDS SURVEY
SHEET 2 of 3

Scale	Drawn By	Checked By	Approved By
N.T.S.	ALB	MJ	JM
	Date 23.04.07	Date 20.03.08	Date 20.03.08

Clients Ref

Drawing Number B0834600/CLR/24/Fig 2 Rev



Reproduced from the Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorized reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. 1000023343 (2007).

Do not scale this drawing

Rev	Description	By	Date	Chk'd	Apprd

Purpose of issue	Rev	Date	Apprd

JACOBS
Jacobs UK Ltd, Park House, Haddenham Business Park, Thame Road, Haddenham, Aylesbury, Bucks. HP17 8LB
Telephone (01844) 296200
FAX (01844) 296201

Oxfordshire Highways
www.oxfordshirehighways.org

Project

COGGES LINK ROAD

Title

BREEDING BIRDS SURVEY
SHEET 3 of 3

Scale	Drawn By	Checked By	Approved By
N.T.S.	ALB	MJ	JM
	Date 02.05.07	Date 20.03.08	Date 20.03.08

Clients Ref

Drawing Number B0834600/CLR/24/Fig 3 Rev