1.0 INTRODUCTION

1.1 The following note provides additional information as requested by Barnsley Metropolitan Borough Council (BMBC) in relation to ecological receptors potentially impacted by the proposed development of Land to the south of Barnsley Road, Goldthorpe (the "Site"). This note aims to provide additional information on how receptors might be impacted, how this will be mitigated or managed and the means to secure the mitigation.

1.2 The Site predominantly occupies the area allocated as ES10 in the Barnsley Local Plan, with additional land to the west included to provide services for flood alleviation and ecological mitigation.

1.3 The proposed design of the Site has evolved from the time of ES10 being allocated. Additional land has been included and additional habitats retained to provide compensation and mitigation for impacts to wildlife and biodiversity. The changes were made following consultation with stakeholders and have been documented within an ecological evolution document.

1.4 Efforts have been made to contact the Barnsley Bird Group for further information relating to bird records in the area, but no response has been had to date.

2.0 IMPACTS TO BREEDING BIRDS

2.1 The FPCR breeding bird report (June 2023), reports the results from surveys conducted during the period April – June 2022. In addition, reference was made to surveys reported by Middleton Bell Ecology (2020).

2.2 The FPCR surveys reported moderate numbers of skylark *Alauda arvensis* and an assemblage including notable, stock dove *Columba oenas*, woodpigeon *Columba palumbus*, starling *Sturnus vulgaris*, house sparrow *Passer domesticus*, linnet *Linaria cannabina*, and yellowhammer *Emberiza citrinella.* A single observations of corn bunting *Emberiza calandra* Wheatear *Oenanthe Oenanthe,* bullfinch *Pyrrhula pyrrhula,* sparrowhawk *Accipiter nisus,* and kestrel *Falco tinnunculus* were observed on only a single occasion.

2.3 Six notable species were confirmed as breeding at the Site, woodpigeon, skylark, starling, song thrush *Turdus philomelos*, house sparrow, and yellowhammer. Seven further notable species were probable breeders; mallard *Anas platyrhynchos*, stock dove, whitethroat *Curruca communis*, wren *Troglodytes troglodytes*, dunnock *Prunella modularis*, greenfinch *Chloris chloris*, and linnet *Linaria cannabina.* Of note is that no grey partridge was reported in the 2023 report.

2.4 The species identified and the assemblage as a whole was considered to be of **Local i**mportance and was largely similar to the assemblage reported in 2020.

Construction Stage Impacts

2.5 At the construction stage there may be potential for birds (particularly ground nesting species) to be directly harmed/killed by construction activities. Measures to prevent this occurring include where possible undertaking works outside the breeding bird season, and if within the breeding season nesting bird checks to be undertaken prior to any works commencing. These measures are set out in the Framework Construction Environmental Management Plan (FCEMP) and will also be provided

in any future detailed CEMP. The implementation of these measures is considered to reduce the potential impacts from direct construction activities to a **negligible** effect.

2.6 At the construction stage works would lead to the clearance of much of the Site and construction would include earthworks and creation of Site infrastructure (development plots would be constructed at a later date under reserved matters). The arable cropland would be permanently lost at this stage, though areas of hedgerow and woodland would be retained, particularly along the Carr Dike corridor and at the Site periphery. Clearance of the Site and construction of infrastructure would lead to **temporary** disturbance (during construction) and **permanent** habitat loss which is expected to lead to a reduction in breeding success for some bird species using the Site. The temporary disturbance is considered to be **Minor** adverse at the **Local** level. The permanent habitat loss is discussed further below as an operational stage impact.

Operational Stage Impacts

2.7 There will be a direct loss of habitat for birds at the Site. The Site is approximately 85.64ha in area, of which the baseline arable habitats comprise approximately 79.43ha. Post development areas of grassland (flood alleviation areas and open grassland with some bird forage planting included) are estimated in the region of 8.5ha, representing around 11% of the total arable area to be lost.

2.8 Although the compensatory grassland areas represent only 11% of the former arable area, it is considered that once established these areas would provide a much higher quality of habitat for birds and other wildlife, with increased diversity in flora and habitat structure. Additionally, other created habitats such as ponds, woodland, scrub, and hedgerows would add diversity of habitat for a range of bird species.

2.9 The June 2023 FPCR report states that this could lead to a total loss of Skylark breeding at the Site, however proposals for the creation and management of grassland areas in the north and west of the Site would provide some limited compensation for the species. Overall, given the numbers of skylark encountered, opportunities in the wider landscape, and the small area of compensation available within the Site there was assessed to be a **Minor** adverse impact (not considered to be significant in terms of the Ecological Impact Assessment) to this species at the **Local** level only from the loss of habitat.

2.10 For comparison, the counts for skylark were 7, 18 and 3 over the three surveys undertaken. Holding territories were less than individual counts. The Middleton Bell 2020 report states the estimated breeding population for Skylark in Barnsley (2006-2011) was 1,100 and published evidence suggests that for cereal crops 0.108 territories[1] per ha would be expected. Given the site is around 80ha 8.64 territories would be expected and given the number of individuals sighted it is considered that the Site supports a low number of skylark territories.

2.11 It was also acknowledged that the loss of arable fields would lead to the loss of breeding habitat for corn bunting, however only a single individual was observed on only one occasion, therefore the impact to this species would similarly be considered to be only **Minor** adverse and is *potentially* ***negligible***.

2.12 Other species in the assemblage were not considered to be reliant upon arable habitat for breeding. The June 2023 FPCR report states that ***off-site compensation for breeding skylark and corn***

[1] Donald, P. F. and Vickery, J. A. (2000) The importance of cereal fields to breeding and wintering Skylark Alauda arvensis in the UK. Pp. 140–150 in N. J. Aebischer, A. D. Evans, P. V. Grice, and J. A. Vickery, eds, Proceedings of the 1999 BOU Spring Conference: ecology and conservation of lowland farmland birds. Tring, UK: British Ornithologists' Union.

bunting is not considered to be necessary given the relatively low number of territories observed during survey.

2.13 The June 2023 FPCR report acknowledges that there will also be a reduction in arable foraging habitat during the breeding season. Only moderate to low numbers of farmland specialist birds (e.g. linnet and yellowhammer) were considered to be present at this time of year from the survey results. Overall again the impact to those species specialised for arable foraging were considered to be **Minor** adverse at a **Local** level (not considered to be significant in terms of the Ecological Impact Assessment).

2.14 Other species considered not to be specialised to arable habitats were considered likely to benefit from the retention and creation of woodland and hedgerow habitats as well as the creation of new habitats such as scrub/woodland edge and ponds. Details of habitat retention, creation and management are provided in the Framework Landscape and Ecological Management Plan with further detailed management to be provide in future LEMP documents. Habitat creation would also introduce habitat suitable for willow tit *Poecile montanus kleinschmidt* which is listed on the designation of the nearby Dearne Valley Wetlands SSSI. As such, it is considered that non-farmland specialist species would be subject to a **Minor** beneficial impact at the **Local** level from habitat creation.

2.15 Additionally, supplementary winter bird crops and feeding are proposed on-Site. These measures will have some benefit in providing food for farmland and other bird species over winter, potentially allowing more birds to survive through winter into the breeding season and those that survive also more likely to breed successfully from being in better condition after winter. This feeding is likely to be beneficial to some of the notable species listed (such as skylark) within the local area even if they do not directly nest and breed within the Site.

Summary: Breeding Birds

2.16 During construction there would be a loss of all arable ground nesting habitat. This would remain so throughout the operational phase and is considered as an operational phase impact.

2.17 Temporary disturbance from construction would be considered to be **Minor** adverse at the **Local** level and of a **temporary** nature to the local level bird assemblage.

2.18 The development of the Site would lead to around 80ha of cropland being removed. Around 8.5ha of high-quality grassland would be created in the west and north of the Site.

2.19 Only skylark and corn bunting were identified as notable arable breeding specialists, and corn bunting only identified a single an individual. Territories for breeding skylark are considered to be low at the Site.

2.20 Given the low number of skylark territories observed during survey it is considered that construction and development phase impacts are **Minor** adverse at the **Local** level. Minor level effects are not considered to be significant within the Ecological Impact Assessment for the Development.

2.21 Overall, it is considered that ***off-site compensation for breeding skylark or other ground nesting birds is not required.***

2.22 For non-arable specialists there would be a **Minor** beneficial impact at the **Local** level in the longer term due to additional habitat creation (grassland, hedgerow, woodland, aquatic habitats).

2.23 Additional winter resources proposed to be provided at the Site would potentially increase the numbers of birds available for breeding and increase the success of breeding at the Site or in the local area.

3.0 IMPACTS TO WINTERING BIRDS

3.1 FPCR undertook a scoping survey in February 2022 and further full wintering bird survey over the 2022-23 winter period. Reported in FPCR Wintering Bird Survey Report June 2023.

3.2 Efforts were made to contact the Barnsley Bird Study Group, though FPCR were told that the group is not currently active, and no information was provided.

3.3 The assemblage recorded during the surveys included 20 species considered to be of **Local** importance. Overall the assemblage was considered to be of **Local** importance, due predominantly for farmland bird species.

3.4 It was noted that the November 2022 survey observed a large flock of skylark, however the size of the flock was not sustained in further surveys.

3.5 A large number of linnets were observed in January (526 individuals) but much smaller numbers were observed during the other surveys. Additionally, a relatively large number of yellowhammers were also observed in January (66 individuals) with lower numbers on other occasions.

3.6 Schedule 1 birds observed included redwing and fieldfare. Redwing were observed on only three of four surveys occasions, and although fieldfare was observed on all occasions, only two individuals were noted in November 2022 and a single individual in December 2022. Schedule 1 protection extends to listed species during the breeding season as well as their nests, eggs, and dependant young. Other special protection extends to winter habitats for those species.

3.7 Fieldfare are known to be social birds and can often be seen in flocks of over 200 individuals roving through the countryside in winter. They are also known to be generalist in nature and will visit hedgerows, woodland, parks and playing fields as well as farmland habitat[2][3]. The numbers of fieldfare identified during the survey are not considered to be high for this species and the surveys imply the species were using the Site opportunistically as roving flocks. The habitats at the Site are not considered to be significantly unique in supporting this species at the local level given the generalist feeding habits of the species and other varied opportunities in the wider area of Goldthorpe and beyond.

3.8 Redwing are known to feed in fields, hedgerows, parks, and on some occasions will also visit gardens [4][5]. Although the initial observation of 77 individuals (Nov. 2022) is considered to be relatively high, this is not uncommon for the species in the UK. No redwing individuals were seen in December 2022 and then in January and February smaller, more expected, numbers (20 and 33 individuals respectively) were noted. Overall the survey implies that redwings were using the site opportunistically as roving flocks with significant numbers on only one occasional and not on a regular basis. The habitats present habitats at the Site are not considered to be significant to support this species at the local level given the generalist feeding habits of the species and the other varied opportunities in the wider area of Goldthorpe and beyond.

[2] RSPB: Fieldfare https://www.rspb.org.uk/birds-and-wildlife/fieldfare
[3] Yorkshire Wildlife Trust: Fieldfare https://www.ywt.org.uk/wildlife-explorer/birds/thrushes-chats-flycatchers-starling-dipper-and-wren/fieldfare
[4] RSPB: Redwing https://www.rspb.org.uk/birds-and-wildlife/redwing
[5] Yorkshire Wildlife Trust: Redwing https://www.ywt.org.uk/wildlife-explorer/birds/thrushes-chats-flycatchers-starling-dipper-and-wren/redwing

3.9 Yellowhammers are birds of open countryside, often associated with hedgerow habitats. Yellowhammers are dependent on large seeds (grass and cereal seeds), if food is scarce Yellowhammers will sometimes move into human environments such as farmyards and rural gardens[6]. Some research suggests that Yellowhammers avoid cultivated winter cereal crops but prefer cereal game-cover plots, feeding sites, field boundaries and stubble[7]. Although a relatively large number of Yellowhammer were observed on one occasion, this was not a regular occurrence through the survey period.

3.10 Linnets are a small finch that is present in heathland, scrub, and farmland and which feeds on seeds throughout the year. In winter they may form large flocks, joining other seedeaters (such as fieldfare), and roam the countryside feeding on stubbles, saltmarshes, and wasteland[89]. Although a relatively large number of Linnet were observed on one occasion, this was not considered to be out of place for this species and was not a regular occurrence through the survey period. It is considered likely that linnets observed in large numbers were in a roving flock stopping at the Site opportunistically.

Construction Stage Impacts

3.11 Clearance of the Site will result in the permanent loss of arable habitats, which will remain so during the operational stage and will be further considered below.

3.12 No breeding birds were identified during the winter period therefore disturbance from construction activities is not considered to have an effect on any winter breeding species.

3.13 Disturbance from construction activities may potentially deter species from visiting the Site or the immediate vicinity for foraging of winter food resources. This would be **temporary** (during construction) and considered to be minor adverse at a local level for wintering birds. The assemblage being encountered being of mainly species that could forage in other habitats present in the wider area and that would normally rove across the countryside rather than rely on a single location.

Operational Stage Impacts

3.14 The loss of the extensive arable habitats is considered likely to lead to a significant or complete loss of skylarks as a wintering species at the Site, as they require large areas of winter stubble and open environments. Given the numbers observed during the survey this is considered to be a **Minor adverse** impact to this species at the **local l**evel.

3.15 The impact to skylarks will be compensated, to some extent by the grassland areas in the west and north of the Site which will also be provided with winter bird forage crops and supplementary feeding. Some sources state that skylarks prefer large fields for winter forage (with over 2.5ha being cited[10]). The grassland area in the west of the Site will be approximately 4.9ha (with some additional grassland immediately south along Carr Dike), and the northern area would be around 2.3ha. As such, it is considered that the western area would be suitable for winter foraging skylark, and the northern area would be less suitable but could potentially be used. Overall the impact would still be considered to be **minor adverse** at the **local** level.

[6] British Trust for Ornithology: Yellowhammer https://www.bto.org/our-science/projects/gbw/gardens-wildlife/garden-birds/a-z-garden-birds/yellowhammer
[7] Bradbury R and Stoate C. 2000. The ecology of Yellowhammers Emberiza citrinella
on lowland farmland. Ecology and Conservation of Lowland Farmland Birds. British Ornithologists Union. https://bou.org.uk/wp-content/uploads/2020/06/LFB-1-17-Bradbury-Stoate.pdf
8 Yorkshire Wildlife Trust: Linnet https://www.ywt.org.uk/wildlife-explorer/birds/finches-and-buntings/linnet
[9] British Trust for Ornithology: Linnet https://www.bto.org/understanding-birds/birdfacts/linnet
[10] Birds in Cheshire and Wirral A breeding and Wintering Atlas. http://www.cheshireandwirralbirdatlas.org/species/skylark-wintering.htm

3.16 Loss of arable habitat would likely reduce the overall foraging resources for the farmland species identified using the Site, including fieldfare, redwing, yellowhammer, and linnet. Fieldfare and redwing were considered to be predominately roving flocks with additional resources in the wider landscape from a number of varied habitats, as such the loss of the habitat at the Site would not be considered to be particularly significant but only **minor adverse** at the **local** level.

3.17 The numbers of yellowhammer and linnet although high on one occasion, were not consistently high through the surveys and impacts would not be considered to be particularly significant to these species, being **minor adverse** at the **local** level.

3.18 Although impacts are not considered to be significant (in the context of the EcIA), proposed mitigation measures will include the provision of areas within the grassland in the west and north of the Site seeded with winter bird forage crops to provide additional winter resources. Supplementary winter bird feeding will also be provided at two locations in west and north of the Site, providing seed throughout the winter with 25kg of seed distributed at each location on a weekly basis.

3.19 Winter bird forage is promoted by the UK Government (DEFRA) as part of the Sustainable Farming Incentive Scheme. There is a wealth of research available on the effectiveness of agri-environmental schemes with winter bird foraging crops to support overwintering farmland birds[11] (with specific evidence for yellowhammer and corn bunting[12]), especially when also sited adjacent to woodland and hedgerow habitats[13][14]. One study reported that several species showed significantly higher winter abundances on agri-environment scheme treatment plots (particularly reed bunting, yellowhammer, and linnet)[15].

3.20 Supplementary feeding has been shown to increase the effectiveness of winter forage crops and attract substantially greater numbers of seed-eating farmland birds than control plots without additional feeding[16]

3.21 Overall, the provision of additional on-Site planting of winter bird crops (generally as per Government Sustainable Farming Scheme guidance) and supplementary feeding would be expected to provide additional winter resource for a number of species, particularly linnet and yellowhammer but also to other farmland birds such as skylark, fieldfare, and redwing. Although it is anticipated that there would remain some reduction in available resources due to the loss of arable habitat the effect would remain only **minor adverse** at the **local** level. With the provision of on-Site supplementary winter resources off-site compensation is not considered to be necessary.

Summary: Wintering Birds

3.22 During construction there would be a loss of all arable forage habitat. This would remain so throughout the operational phase and is considered as an operational phase impact.

[11] I.G Henderson, J.A Vickery, N Carter. 2004. The use of winter bird crops by farmland birds in lowland England. Biological Conservation

[12] MD Burgess, JA Bright, AJ Morris, RH Field, PV Grice, AI Cooke, W Peach 2015. 3.25 Selective use of agri-environment scheme areas by Yellowhammer and Corn Bunting. Journal of ornithology, Springer

[13] Henderson I.G. 1999. A Large-Scale Survey of the Use of Winter Bird Crops by Foraging Birds on Farmland. BTO and MAFF

[14] Neyens, T. et al. 2023. Winter agri-environment schemes and local landscape composition influence the distribution of wintering farmland birds. Global Ecology and Conservation.

[15] J.W. Redhead, S.A. Hinsley, B.C. Beckmann, R.K. Broughton, R.F. Pywell. 2018. Effects of agri-environmental habitat provision on winter and breeding season abundance of farmland birds. Agricultural Ecosystems and Environment.

[16]. Broughton, R K et al. 2020. Intensive supplementary feeding improves the performance of wild bird seed plots in provisioning farmland birds throughout the winter: a case study in lowland England. Bird Study.

3.23 Temporary disturbance from construction would be considered to be **Minor** adverse at the **Local** level and of a **temporary** nature to the local level bird assemblage.

3.24 The development of the Site would lead to around 80ha of cropland being removed. Around 8.5ha of high-quality grassland would be created in the west and north of the Site, with this landscaping specifically configured to allow mitigation for bird species following discussion with stakeholders. With the main area in the west of the Site being around 4.9ha (with a smaller area south of this) and the area in the north around 2.3ha. Parts of these areas will be seeded with a winter bird forage crop and supplementary bird feeders will be provided through the winter period.

3.25 Schedule 1 birds redwing and fieldfare were noted in the surveys. These species are known to rove in large numbers and use a variety of habitats. The loss of arable habitat at the Site is not considered to be significant to these species.

Yellowhammer and linnet were also noted in surveys and prefer farmland, though linnets are known to also rove in large numbers.

3.26 The loss of habitat for farmland birds within the assemblage recorded is considered to be **minor adverse** at the **local** level, however on-Site supplementary winter feeding (crops and feeders) would further reduce the impact. There would remain a **minor adverse** effect at the **local** level on these species, but ***no off-site compensation is considered necessary.***

4.0 IMPACTS TO MARSH HARRIER

4.1 Marsh harriers were noted from surveys in 2020 to be using parts the Site (mainly the western area around Carr Dike) in the late summer, post fledging of juvenile marsh harriers. Marsh harriers are reported to have bred at RSPB Old Moor (approximately 1.4km south-west of the Site) between 2020 and 2023. Marsh harriers were present at Old Moor again in 2024.

4.2 Impacts to marsh harriers from the operational stage of development are further explored in the FPCR Marsh Harrier Technical Note and Marsh Harrier Evidence Base documents and include the loss of permanent habitats from the Site. Grassland areas around Carr Dike (where marsh harriers were previously active) will be retained and the western flood alleviation area will be managed with a grassland suitable to support foraging/hunting marsh harriers, with a pond and reedbed providing additional diversity and potential for prey species.

Construction Stage Impacts

4.3 Marsh harriers are not known to nest at the Site with existing habitats unsuitable for marsh harriers to nest. Furthermore, the previous evidence base document highlighted that during nesting marsh harriers hunting territories (particularly those of the female) will be smaller and more focused on habitats near to the nest. As such, it is not anticipated that the marsh harriers are dependent upon habitats at the Site are during the nesting period. Therefore no construction stage impacts are expected in relation to direct disturbance to marsh harriers nesting.

4.4 Groundworks will be extensive in the area near where the marsh harriers have been known to use (west and south-west of the Site). Movement of machinery is likely to be a major deterrent to any wildlife in the immediate vicinity, and for marsh harriers the distance of deterrence could be 200m or more.

4.5 Although grassland and woodland in the immediate Carr Dike corridor would be retained the wider arable habitats would be lost removing potential cover for marsh harriers. This would be temporary

but limited cover would be available until the new grassland habitats establish (at least one growing season before cover would be available).

4.6 Timing of works would be done so that clearance and earthworks would take place immediately after marsh harriers have fledged and dispersed from the area/Site. Likely to be around August/September.

4.7 Should the grassland be seeded in August/September (as soon after the dispersal of the marsh harriers as possible) and would allow the new habitat to begin to establish over winter allowing for more vigorous growth in the spring.

4.8 The above measures would reduce the potential period of disturbance to marsh harriers to the following season only, assuming that groundworks would be continue into the following season but not in the immediate vicinity of the marsh harriers. By the second season any ongoing works would be expected to be minimal and created bunds/mounds and habitats would be expected to be established, providing some level of cover and mitigation from disturbance.

4.9 Overall it would be expected that direct disturbance from construction activities (vehicle movements, noise, light, and vibration) would be temporary (for one to two seasons). This could deter the marsh harriers from using the Site or parts of the Site during these times. The previous literature review (See FPCR Marsh Harrier Evidence Base Note) showed that there is evidence that marsh harriers are adaptable and able to hunt in a variety of habitats. As such, it would be expected that during the period of temporary disturbance the birds would utilise similar or other suitable habitats in the wider area (For example Carr Dike has similar habitats to the west of the Site).

4.10 Once habitats are established it would be expected that these would be able to support a higher density of prey species than arable monoculture and marsh harriers would begin to use the Site again, particularly the western corridor area.

4.11 Overall, the construction stage impacts would be expected to deter the marsh harriers from using the Site or parts of the Site on a temporary basis and would be considered to be a **minor** adverse effect to marsh harriers at the **county** level (given that the breeding pair are the only pair known in the **county**). Timing of works would be used to keep the duration of the effect to an absolute minimum.

5.0 SECURING MITIGATION

5.1 Measures to safeguard retained habitats and wildlife during construction are outlined within the Framework CEMP document.

5.2 Habitat creation will meet the needs of various requirements, from landscaping and visual amenity, biodiversity net gain requirements, mitigation, and enhancement for wildlife including bird species.

5.3 The broad detail of habitat creation is provided within a Framework LEMP document. Further more detailed information will be provided within additional Biodiversity Impact Assessment reports and detailed LEMP documents to be submitted for each phase of the development. The LEMP documentation will also provide details of mitigation measures to installed/created within the Site that would benefit wildlife (e.g. bat and bird boxes, log piles and other habitat features).

5.4 The LEMP documents will also provide a schedule of landscape management/maintenance and monitoring of habitats and mitigation features. Responsibilities for undertaking habitat and mitigation creation, management and monitoring will be provided within the LEMP documents.

5.5 The above mitigation will be secured within an appropriately worded Section 106 agreement to be agreed upon by the developer and BMBC.

5.6 A separate planning condition/s should be used to secure the specific details of mitigation and enhancement measures not provided for in the S106 agreement. This may include the number of and location of features (such as log piles, bat boxes/ bird boxes etc.) and the details of how these will be managed and monitored.