Skyline Ecology

Green Lane Railway Cutting

Phase 1 habitat survey

Final

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Appendix A Desk Study Information

1 Executive Summary

1.1.1 This ecological report has been prepared by Skyline Ecology on behalf of the client. It is understood that the report is to form an application for the filling in of the railway cutting to make safe the bridge associated with Green Lane. The project also includes the redesign of the former track bed to form a gentle gradient level with the existing bridge deck.

1.1.2 The study site is dominated by a mosaic of scrub, semi-improved neutral grassland and young woodland that borders arable land. The site is used as a footpath by dog walkers although from the overgrown nature of the eastern section of the path it is likely that this is only undertaken on an infrequent basis. At the central point of the site, where the railway cutting crosses under Green Lane is a steel bridge with stone pillars.

1.1.3 The bridge located in the centre of the site does have some potential to support roosting bats, especially on the southern section where the steel deck meets the stone abutment. No evidence of bats was recorded during the daytime survey however any potential features within the area mentioned above would not be seen from ground level.

1.1.4 Consultation with the Barnsley Biodiversity Officer highlighted the presence of willow tit within the area, although no records were noted within the data search. This species is in rapid decline and is of some concern to the local authority.

1.1.5 Evidence of barn owl was recorded beneath the northern side of the bridge between the abutment and bridge deck. Owl pellets and feathers were recorded at the base of the abutment suggesting that this feature is used on a regular basis.

1.1.6 To maintain connectivity through the site it is proposed that clearance works leave a section of scrub/trees/hedgerows at the top of the cutting to maintain connectivity whilst works are being undertaken. Seeds/turfs should be collected from the western side of the cutting to either be moved to the eastern side of the site or related back onto the western side. The turfs should be selected in areas of grassland, where the species diversity is the greatest. In addition seed should be collected from these areas and used after work has been completed to seed the new cutting profile.

1.1.7 Further survey of the bridge abutments will be required to establish the presence/absence of bats within the bridge. In addition a strategy should be agreed to maintain connectivity for bats through the site. This can be achieved by leaving a line of scrub/trees at the top of the cutting to maintain a green corridor.

1.1.8 Prior to any works being undertaken, a breeding bird survey should be carried out with specific focus on willow tit. Surveys will need to be carried out between February and June and will require a minimum of three visits to site to establish a comprehensive bird assemblage; this recommendation was provided by the Barnsley Biodiversity Officer. The result of this survey may require inclusion of new nesting features within the corridor and/ or the inclusion of specific planting to maintain/enhance habitat within the site.

1.1.9 As the site is to be restored after works have been completed it may be possible to begin initial clearance works without undertaking a detailed bird survey. A consultation with the Barnsley Biodiversity Officer is recommended to confirm if this would be appropriate. Possible recommendations could be to leave scrub at the top of the railway cutting to maintain bird habitat, to install nest boxes on some of the larger trees to be retained and to undertake vegetation clearance during the winter months. The intention is to clear vegetation on one side of the bridge in one season and to undertake the same works on the other side of the bridge in the following season. This will maintain some continuous habitat throughout the infilling phase of the works.

1.1.10 As a direct result of the filling in of the bridge, there will be a loss of a Barn owl nesting site. Replacement nesting opportunities should be included within the scope of landscaping of the site. These new nesting features should be provided before works begin on the bridge and

should include the provision of barn owl boxes, either within suitable trees or on poles along the route. The boxes should be hidden from view of the railway cutting to reduce the chance of vandalism. Consultation with the Barn Owl Trust and the Barnsley Bird Study Group should be undertaken prior to any formal agreement of box location.

1.1.11 Standard best practice should also be adhered to with regard to vegetation clearance and therefore works should be programmed outside of the breeding bird season (September to March). If this is not possible then any works should only be undertaken after a suitably qualified ecologist has established that no birds are nesting. Should nesting birds be recorded then any work in this area must cease until the chicks have fledged.

1.1.12 Although no evidence of badgers has been found, the dense vegetation within this area may hide features such as sett entrances. It is therefore recommended that a walkover survey is undertaken during the winter/early spring (when the vegetation has died back) to check for any setts within the study site and surrounding area.

1.1.13 The site offers some limited potential for reptiles, in particular slow worm and lizards, although basking areas are limited. It is recommended that vegetation is cleared on the eastern side of the bridge first and works to the western side should only be undertaken after the majority of habitat has been reinstated. Works can then begin in the same way on the western side of the site. In addition any log piles or potential refugia should be removed whilst a suitably qualified ecologist is present. Any reptiles found should be allowed to escape before works proceed.

2 Introduction

2.1 Site Description

2.1.1 The study site is a disused railway on the Doncaster/Barnsley boundary surrounded by arable land. The site is located between the villages of Barnburgh and Goldthorpe at ordnance survey grid reference SE 47034 03854.

2.2 Description of Project and Background to Commission

2.2.1 This ecological report has been prepared by Skyline Ecology on behalf of the client. It is understood that the report is to form an application for the filling in of the railway cutting to make safe the bridge associated with Green Lane. The project also includes the redesign of the former track bed to form a gentle gradient level with the existing bridge deck.

2.3 Aims of Study

2.3.1 The objectives of the desk study and survey were as follows:

- Present evidence of, or any potential for, protected species supported by the site;
- Set out the legislative and/or policy protection afforded to protected species associated with the site;
- Present an assessment of any potential ecological impacts of development within the site based on the survey findings;
- Provide recommendations for any further surveys if considered necessary; and
- Provide recommendations on mitigation, compensation and/or enhancement measures that are likely to be required to ensure that the proposed development will be acceptable in planning terms and will comply with current wildlife legislation.

2.3.2 This report sets out the results of the survey and, in the context of any known ecological interest identified as a result of the desk study, sets out the approach necessary to ensure that effects on any identified ecologically sensitive receptors are avoided or ameliorated. This will ensure that the proposed development will be acceptable with reference to the planning and legal framework relating to ecological resources.

3 Methods

3.1 Desk Study

3.1.1 A desktop study was carried out to determine:

i. The known presence of any protected or notable species or habitats in the site or within a 2km radius of the site.

ii. The presence of designated conservation sites such as statutory Sites of Special Scientific Interest (SSSI) or non-statutory Local Wildlife Sites (LWS) within the site or within a 2km radius of the site.

3.1.2 As the site straddles two local authorities both Sheffield Biological Records Centre (SBRC) and Doncaster Biological Records Centre (DBRC) were contacted for information pertaining to protected / notable species and designated sites. In addition South Yorkshire Bat Group were contacted to provide bat records for the search area. Further information was gathered using publically available online resources in particular the government's natural environment geographic information website (www.magic.gov.uk).

3.1.3 In addition to the above a verbal consultation was undertaken with Doncaster and Barnsley's Biodiversity Officers.

3.2 Extended Phase 1 Habitat Survey

3.2.1 An extended Phase 1 Ecological Survey was undertaken on 1st September 2016. The weather during the surveys was warm and dry, with a light breeze and an approximate temperature of 25°C. Paul Howden-Leach MCIEEM walked the site and the habitats were described using the Phase 1 Habitat Survey methodology. Target notes were also prepared on features of particular ecological interest and an assessment was made of the site's potential to support protected and notable species.

3.3 Limitations to Methods

3.3.1 DMBC have provided over 4500 records for the search area. Due to the number of records provided these have not been placed within the appendix of this report but are available upon request.

4 Results and Interpretation

4.1.1 This section sets out the findings of the desk study and survey work. Whilst every effort was made to provide a comprehensive description of the site during the field survey, no investigation can provide a complete assessment as the natural environment is difficult to predict and can therefore be subject to potential change.

4.1.2 In addition to the above, lack of data from desk-based studies does not necessarily indicate the absence of species or habitats as the species or area may be under-recorded.

4.1.3 The results of the surveys should be read in conjunction with the figures in Section 8 and Appendix 1 of this report.

4.2 Protected Sites

4.2.1 The study site does not fall within a non-statutory designated site. Three Local Wildlife Sites have been recorded within the search area. The closest of these is Hickleton Park located approximately 450 metres to the north. The site is designated due its extensive areas of parkland/wood pasture, mixed deciduous woodland plantations and more formal ornamental gardens and trees.

4.2.2 The closest SSSI to the study site is Bilham Sand Pits located approximately 3.5km to north east of the site. The site is designated for its geological interest.

4.3 Habitat Description

4.3.1 This section should be read in conjunction with Figure 1 and associated target notes, located in Section 7 of this report.

4.3.2 The study site is dominated by a mosaic of scrub, semi-improved neutral grassland and young woodland (Image 1) that borders arable land. The site is used as a footpath by dog walkers (Image 1) although from the overgrown nature of the eastern section of the path it is likely that this is only undertaken on an infrequent basis. At the central point of the site, where the railway cutting crosses under Green Lane is a steel bridge with stone pillars (Image 2).

Image 1: Mosaic scrub and woodland and informal footpath



Image 2: Bridge over railway cutting



Grassland/Tall Ruderals/Scrub

4.3.3 The majority of the cutting on the western side of Green Lane is a mosaic of grassland tall ruderals and scattered/continuous scrub (Images 1 and 3). The area is not subject to any

formal management and is likely to eventually succeed into scrub and ultimately woodland habitat. Due to the nature of the site straddling three habitat types the plant species within the cutting are diverse. Species recorded include black knapweed *Centaurea nigra*, ash *Fraxinus excelsior*, red fescue *Festuca rubra*, ribwort plantain *Plantago lanceolata*, hawthorn *Crataegus monogyna*, ragwort *Senecio jacobaea*, bracken *Pteridium aquilinium*, bindweed *Convolvulus arvensis*, rosebay willowherb *Chamerion angustifolium*, bramble *Rubus fruticosus*, white clover *Trifolium repens*, dog rose *Rosa canina*, dandelion *Taraxacum officinale*, cow parsley *Anthriscus sylvestris*, hogweed *Heracleum sphondylium*, nettle *Urtica dioica*, cherry *Prunus* sp., St Johns wort *Hypercium perforatum*, creeping buttercup *Ranunculus repens*, false oat grass *Arrhenatherum elatius*, Yorkshire fog *Holcus lanatus*, bird's foot trefoil *Lotus corniculatus*, mugwort *Artemisia vulgaris*, oak *Quercus robur*, broad-leaved plantain *Plantago major*, devil's bit scabious *Succisa pratensis*, pineapple weed *Matricaria discoidea*, yarrow *Achillea millefolium*, gorse *Ulex europaeus*, ground elder *Aegopodium podagraria*, elder *Sambucus nigra*, willow *Salix* sp., hazel *Corylus avellana*, creeping thistle *Cirsium arvense*, raspberry *Rubus idaeus*, honeysuckle *Lonicera periclymenum*, sycamore *Acer pseudoplatanus*, male fern *Dryopteris filix-mas*, silverweed *Potentilla anserine* and coltsfoot *Tussilago farfara*.

4.3.4 This species list is unlikely to cover all plants present within the sward and understory. Although the grassland is species diverse many of the plant species above are common, however this wide range of plant species may provide an essential resources for bird an invertebrate species.

Woodland /Scrub

4.3.5 To the east of green lane, the cutting is dominated by young broad-leaved woodland and scrub. Much of the woodland is dominated with silver birch and willow, although oak and ash are present within the makeup. Due to the unmanaged nature of the site the understory is very dense (Image 4) and in many areas impassable. The area is also very dark with no natural light reaching the ground flora

Image 3: Scrub habitat on western side of bridge



Image 4: Dense scrub on the eastern side of bridge



Trees

4.3.6 On the top of the railway cutting are a number of individual large trees, these are believed to be outside of the red line boundary and as such will not be affected by the proposed works.

Bridge

4.3.7 The bridge is an active road bridge of steel construction with stone abutments (Image 2). Due to the height of the bridge a detailed inspection could not be carried out.

4.4 Protected Species

4.4.1 The species likely to be affected by the development have been determined by the findings of the desk study and site surveys combined. A description of the suitability of the site for these ecological receptors, and any evidence of their presence, is set out below. Target Notes (TN) shown on Figure 1 are referred to in the text below.

Bats

4.4.2 South Yorkshire Bat Group provided 24 bat records for the search area of which 9 have been confirmed as roosting sites. The closest of these are of a Pipistrelle *Pipistrellus* sp. record 750 metres to the west of the study site which links directly with the study site along the existing railway cutting, and of a soprano pipistrell bat *Pipistrellus pygmaeus* located 750 metres east of the study site but again with direct links towards the study site. Other species recorded within the data search include brown long-eared bats *Plecotus auritus*, common pipistrelle *pipistrellus pipistrellus* noctule bat *Nyctalus noctula*, natterer's bat *Myotis nattereri* and daubenton's bat.

4.4.3 The bridge located in the centre of the site does have some potential to support roosting bats, especially on the southern section where the steel deck meets the stone abutment (Image 5). No evidence of bats was recorded during the daytime survey however any potential features within the area mentioned above would not be seen from ground level. It is unlikely that bats would use features on the northern side of the bridge due to the presence of barn owls.

4.4.4 It is highly likely that railway cutting will provide a good commuting route through the site as well as numerous foraging opportunities (Image 6). No formal transect surveys have been undertaken along the route to confirm this however a sheltered, dark, well vegetated linear route way such as this, with links to habitats such as the River Dearne and pockets of woodland such as Bella Wood, is highly likely to be used by commuting bats.

Image 5: Possible roosting location within the bridge



Image 6: View of the former railway embankment from above



Birds

4.4.5 DMBC and SBRC have provided 449 bird records for the search area, a large number of these are associated with wetlands such as kingfisher *Alcedo atthis*, grey heron *Ardea cinerea* and Canada goose *Branta Canadensis* which are unlikely to be affected by the proposed works. In addition there are records of a number of species associated with farmland such as red legged partridge *Alectoris rufa,* skylark *Alauda arvensis* and lapwing *Vanellus vanellus* however, although the study site is adjacent to arable land, it is unlikely to support these species within the cutting due to a mixture of disturbance from dog walkers and the site not being the preferred habitat for these species. A number of bird species associated with

hedgerows may use the study site such as song thrush *Turdus philomelos*, wren *Troglodytes troglodytes and* bullfinch *Pyrrhula pyrrhula*. There are also records of barn owl located approximately 1.8KM to the north of the study site.

4.4.6 Consultation with the Barnsley Biodiversity Officer highlighted the presence of willow tit within the area, although no records were noted within the data search. This species is in rapid decline and is of some concern to the local authority.

Image 7: Possible nesting location of barn owl



Image 8: Owl pellets



4.4.7 The scrub and young woodland throughout the length of the site has the potential for nesting birds. Birds associated with gardens, farmland fringe or hedgerows are likely to use these features. The majority of these features will need to be removed to facilitate the proposed works.

4.4.8 Evidence of barn owl was recorded beneath the northern side of the bridge between the abutment and bridge deck (Image 7). Owl pellets and feathers were recorded at the base of the abutment (Image 8) suggesting that this feature is used on a regular basis. It is unclear as to the level of usage by barn owls but judging by the number of pellets recorded the bridge has the potential to be a nesting site for barn owls.

Reptiles

4.4.9 Two reptile records have been provided for the Barnburgh area by DBRC, both of these records are for grass snake *Natrix natris* however both records are over 40 years old. A record for grass snake was also provided by SBRC, the record is from 2013 but is for the area around West Moor wetland, located 1.4 km to the south of the site.

4.4.10 The study site does offer some potentially suitable habitat for reptiles, although none were recorded at the time of survey.

Great Crested Newts

4.4.11 DMBC have only provided one record for great crested newt within the search area. The record is from 1970 and is for Barnburgh Hall Pond. It is unlikely that great crested newts are still present within the pond as this pond is now used for course fishing. The pond is located approximately 800 metres from the study site. SBRC does have records for great crested newts within a pond associated with Barnburgh Lane. No pond is marked on current Ordnance Survey Maps however there is a pond located to the south of Engine Lane approximately 600 metres to the west of the study site.

4.4.12 The closest water bodies to the study site are two areas of open water associated with Dovecote Farm, located approximately 400 metres to the south, and two ponds associated

with Engine lane located approximately 600 metres to the west. Due to the distances away from the nearest pond it is unlikely that great crested newts will be present within the area.

Badgers

4.4.13 DMBC did not provide any badger *Meles meles* records for the search area.

4.4.14 No evidence of badger was recorded on or around the study site, however due to the dense nature of the vegetation and the time the walkover survey was undertaken there is the potential that badger setts could have been missed.

Other Protected Species

4.4.15 No signs or evidence of any other protected species were identified during the field survey. The habitats within the site are not assessed as being suitable to support any other protected species and therefore these are not considered further in this assessment.

5 Legislation and Impacts

5.1 Planning Policy Context

5.1.1 The National Planning Policy Framework (NPPF) came into effect in March 2012. It states that the planning system should seek to contribute to and enhance the natural and local environment by minimising impacts on biodiversity and provide net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity.

5.1.2 The Government launched new Planning Practice Guidance to support the NPPF in March 2014. The new Guidance on the Natural Environment (ID:8) states that information on biodiversity impacts and opportunities should inform all stages of development; it refers to guidance given in the Government Circular 06/2005 (ODPM, 2005) with regards to advice on protected species. Paragraph 99 of the Circular states "It is essential that the presence or otherwise of protected species, and the extent that they may be affected by the proposed development, is established before the planning permission is granted, otherwise all relevant material considerations may not have been addressed in making the decision."

5.1.3 The new Planning Practice Guidance reiterates section 40 of the NERC Act 2006, which places a duty on all public authorities in England and Wales to have regard, in the exercise of their functions, to the purpose of conserving biodiversity. Paragraph 117 of the NPPF also states that local authorities should seek to promote the preservation, restoration and re-creation of priority habitats and recovery of priority species populations, linked to national and local targets, through planning policies. Priority habitats and species referred to in the NPPF relate to species and habitats of principle importance listed in accordance with section 41 of the Natural Environment and Rural Communities (NERC) Act 2006.

5.2 Bats

5.2.1 Bats and their habitats are protected under the Wildlife and Countryside Act 1981 (as amended), and by the Conservation of Habitats and Species Regulations 2012. Taken together, these make it an offence to:

a) Deliberately capture, injure or kill a bat;
b) Deliberately disturb any bat, in particular any disturbance which is likely to (i) impair their ability to survive, breed, reproduce or to rear or nurture their young; or in the case of hibernating or migratory species, to hibernate or migrate; or (ii) to affect significantly the local distribution or abundance of the species to which they belong.
c) To be in possession or control of any live or dead bat or any part of, or anything derived from a bat;
d) Damage or destroy a breeding site or resting place of a bat;
e) Intentionally or recklessly obstruct access to any place that bat uses for shelter or protection;
f) Intentionally or recklessly disturb a bat while it is occupying a structure or place that it uses for shelter or protection.

5.2.2 A bat roost may be any structure a bat uses for breeding, resting, shelter or protection. It is important to note that since bats tend to re-use the same roost sites, current legal opinion is that a bat roost is protected whether or not the bats are present at the time.

5.2.3 Seven bat species are listed in the UK Biodiversity Action Plan and are listed as Species of Principal Importance under the provisions of the NERC Act 2006.

5.2.4 As a full assessment of the bridge’s potential to support roosting bats could not be carried out due to the time of year, therefore there is the potential that an offence could be committed under the legislation highlighted above.

5.3 Birds

5.3.1 All nesting birds are protected under the Wildlife and Countryside Act 1981, which makes it an offence to kill, injure or take any wild bird or take, damage or destroy its nest whilst in use or being built, or take or destroy its eggs. In addition to this, for some rare species (listed on Schedule 1 of the Act), it is an offence to disturb them while they are nest building or at or near a nest with eggs or young, or to disturb the dependent young of such a bird.

5.3.2 A number of bird species are also listed as Species of Principal Importance under the provisions of the NERC Act 2006. The National Planning Policy Framework (NPPF) (paragraph 117) encourages that local authorities to take measures to "promote the preservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species" linking to national and local targets through local planning policies. Planning authorities have a duty under Section 40 of the NERC Act to have regard to priority species and habitats in exercising their functions including development control and planning.

5.3.3 The main potential nesting areas within the study site are the scrub and young woodland habitat which dominate the majority of the study site. The removal of this scrub habitat during the breeding season is highly likely to cause an offence under the above legislation.

5.3.4 The presence of barn owl (possibly breeding) within the bridge abutment must be taken into account. Physical disturbance from undertaking works to the bridge may cause an offence under the above legislation should breeding owls be recorded as being present. In addition disturbance from heavy machinery working close to the bridge may disturb barn owls and also be an offence under the above legislation.

5.4 Badgers

5.4.1 Badgers are protected under the Badgers Act 1992. This makes it an offence to willfully kill, injure, take, possess or cruelly ill-treat a badger, or to attempt to do so; or to intentionally or recklessly interfere with a sett. Sett interference includes disturbing badgers whilst they are occupying a sett, as well as damaging or destroying a sett or obstructing access to it. Removal of significant areas of badger foraging habitat may also contravene the Act, as it could be regarded as cruelty.

5.4.2 No evidence of Badger has been found within the boundary of the development however due to the dense nature of the vegetation within the study site a detailed inspection could not be carried out. Should a badger set be found during clearance works then an offence would occur under the above legislation.

5.5 Reptiles

5.5.1 All British reptiles are protected under the Wildlife and Countryside Act 1981 (as amended by the CRoW Act 2000). Grass snake, slow worm, common lizard, and adder, are protected against intentional killing or injury and against sale. In addition, all British reptiles are UK Biodiversity Action Plan species and are listed as Species of Principal Importance under the provision of the NERC Act 2006.

5.5.2 No reptiles were recorded during the survey however the study site does offer some potential habitat for reptiles. Clearance of the site without considering reptiles may result in an offence under the above legislation.

6 Recommendations

6.1 Habitats

6.1.1 As a result of the proposed development there will be a temporary loss of all habitat. It is the intention of the client to replace all habitats which are to be lost. These works will be undertaken in conjunction with a landscape architect.

6.1.2 To maintain connectivity through the site it is proposed that clearance works leave a section of scrub/trees/hedgerows at the top of the cutting to maintain connectivity whilst works are being undertaken.

6.1.3 Seeds/turfs should be collected from the western side of the cutting to either be moved to the eastern side of the site or related back onto the western side. The turfs should be selected in areas of grassland, where the species diversity is the greatest. In addition seed should be collected from these areas and used after work has been completed to seed the new cutting profile.

6.1.4 Further recommendations with regard to habitat replacement cannot be given until further work associated with protected species has been carried out.

6.2 Bats

6.2.1 Further survey of the bridge abutments will be required to establish the presence/absence of bats within the bridge. From the results of the initial inspection the bridge has moderate potential of supporting roosting bats based on current guidance, therefore a minimum of two dusk and/or dawn surveys will be required to establish this. Survey works can only be carried out during the summer months April to September with at least one of the surveys undertaken between May and August.

6.2.2 In addition to the above a strategy should be agreed to maintain connectivity for bats through the site. This can be achieved by leaving a line of scrub/trees at the top of the cutting to maintain a green corridor.

6.3 Birds

6.3.1 Prior to any works being undertaken, a breeding bird survey should be carried out with specific focus on willow tit. Surveys will need to be carried out between February and June and will require a minimum of three visits to site to establish a comprehensive bird assemblage; this recommendation was provided by the Barnsley Biodiversity Officer. The result of this survey may require inclusion of new nesting features within the corridor and/ or the inclusion of specific planting to maintain/enhance habitat within the site.

6.3.2 As the site is to be restored after works have been completed it may be possible to begin initial clearance works without undertaking a detailed bird survey. A consultation is recommended with the Barnsley Biodiversity officer to confirm if this would be appropriate. Possible recommendations could be to leave scrub at the top of the railway cutting to maintain bird habitat, to install nest boxes on some of the larger trees to be retained and to undertake vegetation clearance during the winter months. The intention is to clear vegetation on one side of the bridge in one season and to undertake the same works on the other side of the bridge in the following season. This will maintain some continuous habitat throughout the infilling phase of the works.

6.3.3 As a direct result of the filling in of the bridge, there will be a loss of a Barn owl nesting site. Replacement nesting opportunities should be included within the scope of landscaping of the site. These new nesting features should be provided before works begin on the bridge and should include the provision of barn owl boxes, either within suitable trees or on poles along the route. The boxes should be hidden from view of the railway cutting to reduce the chance of

vandalism. Consultation with the Barn Owl Trust and the Barnsley Bird Study Group should be undertaken prior to any formal agreement of box location.

6.3.4 Standard best practice should also be adhered to with regard to vegetation clearance and therefore works should be programmed outside of the breeding bird season (September to March). If this is not possible then any works should only be undertaken after a suitably qualified ecologist has established that no birds are nesting. Should nesting birds be recorded then any work in this area must cease until the chicks have fledged.

6.4 Badgers

6.4.1 Although no evidence of badgers has been found, the dense vegetation within this area may hide features such as sett entrances. It is therefore recommended that a walkover survey is undertaken during the winter/early spring (when the vegetation has died back) to check for any setts within the study site and surrounding area.

6.5 Reptiles

6.5.1 The site offers some limited potential for reptiles, in particular slow worm and lizards, although basking areas are limited. It is recommended that vegetation is cleared on the eastern side of the bridge first and works to the western side should only be undertaken after the majority of habitat has been reinstated. Works can then begin in the same way on the western side of the site. In addition any log piles or potential refugia should be removed whilst a suitably qualified ecologist is present. Any reptiles found should be allowed to escape before works proceed.

7 References

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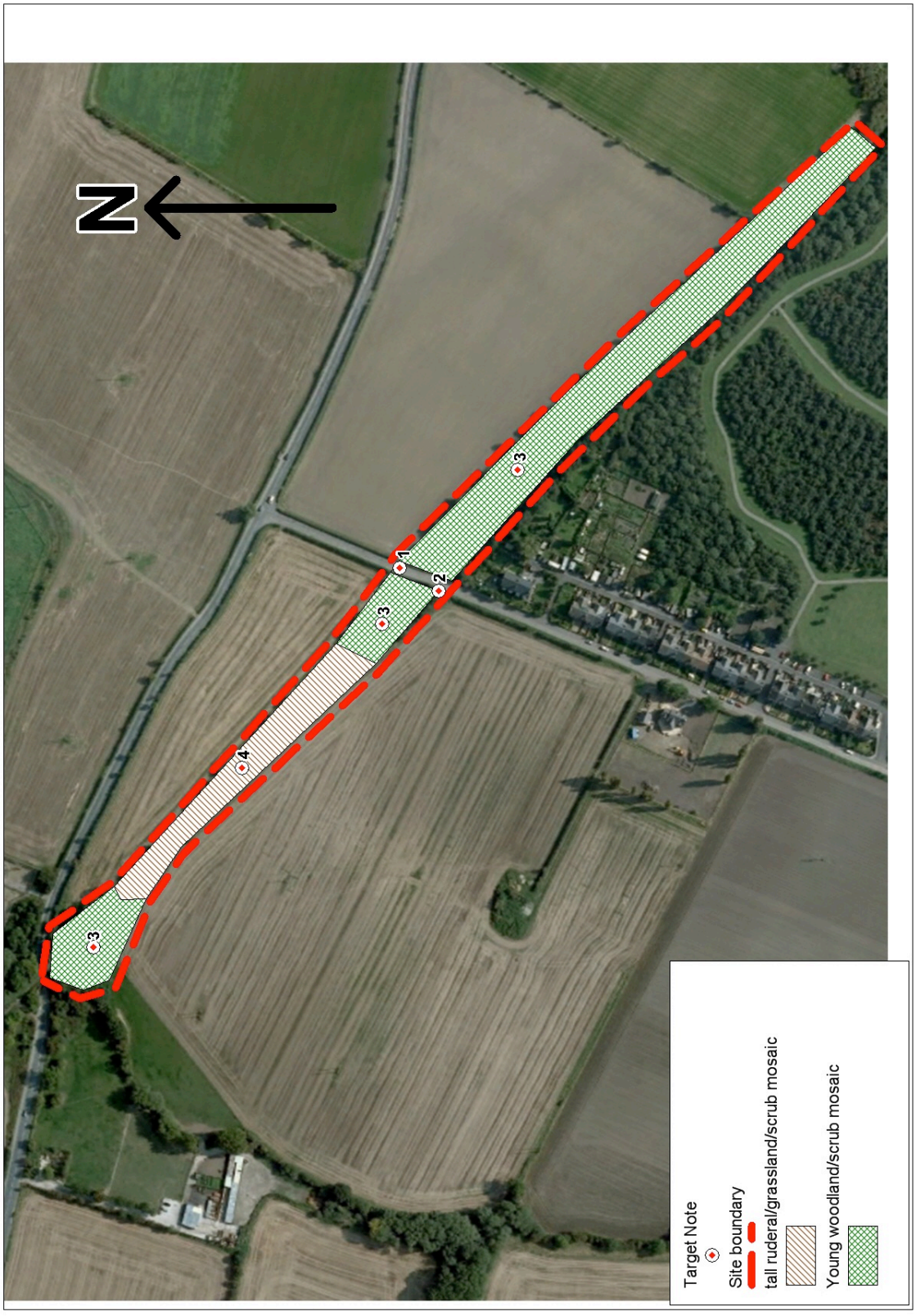
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8 Figures

8.1 Figure 1. Extended Phase 1 Habitat Survey Results



8.2 Target Notes

Target Note 1

Evidence of barn owl beneath deck of bridge

Target Note 2

Moderate potential for roosting bats within the bridge

Target Note 3

Scrub and young woodland mosaic habitat.

Target Note 4

Tall ruderal, semi-improved grassland and scrub mosaic habitat.

Appendix A Desk Study Information

South Yorkshire Bat Group

Recorder	Date	GridRef 6Fig	Type	Access points	Notes	Species	Number	Evidence
English Nature	16/06/2006	SE455024			Bat flew in house 2 days ago - now found baby bat.Bat died.	Vespertillionidae	1	
P Middleton	03/06/2011	SE453020	foraging			Common pipistrelle	3	
P Middleton	03/06/2011	SE453020	foraging			Noctule	1	
P Middleton	03/06/2011	SE453020	foraging			Daubenton's bat	3	
Karen Larkin	22/09/2012	SE455029			adult	Common pipistrelle	1	
Eric Bennett	-	SE457022	House	Gable apex soffit	Reported by owner.	Vespertillionidae	+	
Karen Larkin	08/07/2014	SE458032	Bat Care		R.15.07.14	Common pipistrelle	1	
Karen Larkin	02/07/2016	SE 453034			Bat Care/Callout - CAT VICTIM - DIED	PIP	1	Bat Care/Callout
P Middleton	31/03/2012	SE453046			roosting	Noctule	1	roosting
Eric Bennett	01/10/1998	SE464039				Vespertillionidae	1	
Eric Bennett	08/07/1995	SE465040	House			Pipistrelle sp.	+ Dr	
Eric Bennett	08/07/1995	SE465040				Pipistrelle sp.	4	
English Nature	18/04/2005	SE463045			Bat flying in bedroom. Caught in towel. Collected by EB To LH for care. Bat died. Sent to lab.	Common pipistrelle	1	
English Nature	02/08/2005	SE460040			Injured bat found. Failed to fly last night	Vespertillionidae	Unknown	
Eric Bennett	24/07/1997	SE473034	House	Gable apex		Pipistrelle sp.	25	
Karen Larkin	06/07/2014	SE473034	Bat Care		Died	Common pipistrelle	1	
Karen Larkin	15/07/2014	SE484032	Bat Care		R.	Soprano pipistrelle	1	
Eric Bennett	08/08/2006	SE482052			2 M.mys appeared to fly from stableyard building.	Vespertillionidae	Unknown	
Karen Larkin	01/07/2010	SE4805				Daubenton's bat	1	
Rob Bell	25/06/2013	SE4805			Roost	Natterer's bat	Unknown	
Rob Bell	25/06/2013	SE4805			Roost	Daubenton's bat	Unknown	
Rob Bell	25/06/2013	SE4805			Roost	Brown long-eared bat	Unknown	
Rob Bell	25/06/2013	SE4805			Roost	Common pipistrelle	Unknown	
Rob Bell	25/06/2013	SE4805			Feeding	Noctule	Unknown	

DMBC Citation

Site Status	Local Wildlife Site		
Site Code	6.34	**Grid Reference**	SE 480046
Site Name	Hickleton Park		
Site Owner	Private	**Access**	There is no presumption about Site Access
Site Area (ha)	93.890000000000001	**Natural Area**	Coal Measures
Geology	Carboniferous Mudstone		
Soil Type	Waterlogged loam/clay		
Aspect	South-west facing in part	**Exposed Strata**	No
Audit Species Recorded - ***Invertebrates:*** White Letter Hairstreak (Satyrium w-album (Strymonidia w-album)) - ***Vascular Plants:*** Autumn crocus(Meadow saffron(Naked ladies (Colchicum autumnale)			
Habitats Recorded	PBW (Broad-leaved Plantation Woodland) / SBW (Broad Leaved Scattered Trees) / SNG (Semi-improved Neutral Grassland) / SWE (Standing Water Eutrophic) / AM (Amenity Grassland) / HS (Hard Standing)		
NVC Affiliation	A9 / MG1 / MG7 / S14 / W8 / W10 / W16		
Criteria for LS Designation	WD2 / WD3 / WD5 / PK1 / GR2 / SW1 / SM1 / SM2		
Other Designations *(on site or adjoining)*	Parks and Gardens Greenspace		
Informative *(on site or in locality)*	Creeping Thistle (Cirsium arvense) Spear Thistle (Cirsium vulgare) Japanese Knotweed (Fallopia japonica) Broad-Leaved Dock (Rumex obtusifolius) Common Ragwort (Senecio jacobaea)		
Management Assessment *(Single Data List reporting)*	Managed for conservation in last 5years	31st March 2011	
Management Plan			
Management Scheme	Forestry Commission; WGS	2005 -Mar 2010	
	Environmental Stewardship Scheme	exp Jul 2015	
Advice	None		
HAP/SAP/BAP/GAP			
Boundaries Link to interactive map	Hickleton Park		

Site Description at last visit	13/07/2011

Date of visit - 09 & 23/05/2011, 10 & 17/06/2011 & 13/07/2011

This large site comprises extensive areas of parkland/wood pasture, mixed deciduous woodland plantations and more formal ornamental gardens and trees. It is centred on Hickleton Hall, now utilised as a Sue Ryder Care Home, and located immediately south of Hickleton Village, at the junction of Hickleton Road and Barnsley Road. The general altitude lies between 50 - 110 m. A.O.D. and the surrounding land use is agricultural and residential housing.

A fairly continuous area of mixed deciduous woodland plantation occupies the southern and south-western sectors of the site and continues part way around the eastern boundary as a thin shelter belt. Elsewhere, more ornamental planted woodland is located west of the Hall at the northern end. The parkland trees are scattered or locally frequent throughout the extensive central grassland zones, and typify the 'wood-pasture' or parkland landscape.

The principal woodland area, Bella Wood, incorporating the narrow roadside strip extending from it, contains abundant sycamore (Acer pseudoplatanus) with locally abundant sessile oak (Quercus petraea), locally frequent pedunculate oak (Q. robur) and the hybrid (Q. x rosacea), silver and downy birch (Betula pubescens, B. pendula), beech (Fagus sylvatica), sweet chestnut (Castanea sativa), larch (Larix decidua) and ash (Fraxinus excelsior). Other species of scattered or local occurrence include wych and English elm (Ulmus glabra, U. procera), hornbeam (Carpinus betulus), rowan (Sorbus aucuparia), wild cherry (Prunus avium), common lime (Tilia x europaea), horse chestnut (Aesculus hippocastanum), yew (Taxus baccata) and Scots pine (Pinus sylvestris). Much of the canopy is quite mature, even-aged and regularly-spaced, indicating planted origin. The canopy is often 40 - 45 ft. in height, but elsewhere 30-35 ft, and regeneration is not generally well developed, although birch, oak and sycamore are all showing scattered spontaneous growth in some areas. There are scattered amounts of dead wood and occasional very old cut stumps. There has been recent woodland management to remove or thin some of the conifers. The woodland rides are wide, open and sunny and support an abundance of flowering herbs.

The more-ornamental woodland adjacent to the Hall contains widespread sycamore, with some wild cherry (Prunus avium), locally-frequent yew, laurel (Prunus laurocerasus), snowberry (Symphorycarpos albus), common lime and beech, and these species, with occasional horse chestnut, are also found as scattered mature trees throughout the pasture/parkland zones. Within the ornamental woodlands the herb layer is dominated by ivy (Hedera helix) and dog's-mercury (Mercurialis perennis) with some locally-dominant ramsons (Allium ursinum), and occasional patches of wood anemone (Anemone nemorosa). There is a clump of Japanese knotweed (Fallopia japonica) growing near a garden waste dumping area not far from an old quarry south of the Hall.

There is a scattered or elder (Sambucus nigra) shrub layer in the main woodland zones, and hawthorn (Crataegus monogyna) is a frequent hedge species fronting the road or in other edge situations. Other shrub species are generally scarce or local, and include scattered wild privet (Ligustrum vulgare), gooseberry (Ribes uva-crispa), blackthorn (Prunus spinosa), holly (Ilex aquifolium) and planted rhododendron (Rhododendron ponticum).

The species composition of the herb layer within the woodlands indicates calcareous, neutral and moderately acidic soil types. Bramble (Rubus fruticosus) is abundant in many areas and particularly beneath a dominant sycamore canopy, where it is associated with frequent wood millet (Milium effusum) and locally-frequent ground ivy (Glechoma hederacea), herb robert (Geranium robertianum), wood avens (Geum urbanum), yellow archangel (Lamiastrum galeobdolon), yellow pimpernel (Lysimachia nemorum), dog's mercury (Mercurialis perennis) and ivy (Hedera helix). Other species of scattered occurrence in this more-neutral soil type include hedge woundwort (Stachys sylvatica), dog rose (Rosa canina), hairy brome (Bromopsis ramosa), bluebell (Hyacinthoides non-scripta), wood false brome (Brachypodium sylvaticum) and red campion (Silene dioica).

The open sunny rides of Bella wood support a profusion of flowering herbs including bugle (Ajuga reptans), slender St John's-wort (Hypericum pulchrum), self heal (Prunella vulgaris), primrose (Primula vulgaris), meadow buttercup (Ranunculus acris) and wood speedwell (Veronica montana), as well as the common woodland herbs.

Within Bella wood there are two spring-fed streams which arise in the pastures around the Estate. The streams have been impounded by a dam to create a pond within the woodland. The dam is not longer maintained and the pond has long since silted up. These damper shady zones have locally-frequent

giant fescue (Festuca gigantea), tufted hair grass (Deschampsia cespitosa), creeping buttercup (Ranunculus repens), enchanter's nightshade (Circaea lutetiana) and, rarely, hemp agrimony (Eupatorium cannabinum). Where there is permanent flow of water through the soils, rarer species such as marsh marigold (Caltha palustris), large bittercress (Cardamine amara), opposite-leaved golden saxifrage (Chrysosplenium oppositifolia), lady fern (Athyrium filix-femina) occur together with angelica (Angelica sylvestris), remote sedge (Carex remota), meadow sweet (Filipendula ulmaria), hairy St John's-wort (Hypericum hirsutum) and water mint (Mentha aquatica) under the canopy of alder (Alnus glutinosa), crack willow (Salix fragilis), and grey willow (Salix cinerea).

More acidic soil types beneath sessile oak and birch have a herb layer of locally abundant creeping soft grass (Holcus mollis) with locally frequent bracken (Pteridium aquilinum) and wavy hair grass (Deschampsia flexuosa) with scattered honeysuckle (Lonicera periclymenum), foxglove (Digitalis purpurea), wood sage (Teucrium scorodonia), gorse (Ulex europaeus), broad buckler and male fern (Dryopteris dilatata and D. filix-mas).

In edge areas, on the fringes of the site especially the roadside woodland strips, a more ruderal vegetation type is present, associated with bramble and other species already described. In such zones, rosebay willowherb (Chamerion angustifolium), nettle (Urtica dioica) and hedge garlic (Alliaria petiolata) are locally frequent, together with scattered raspberry (Rubus idaeus) and lesser burdock (Arctium minus).

The extensive wooded parkland landscape comprises cattle-grazed neutral pasture which is generally species poor and dominated by perennial rye-grass (Lolium perenne), white clover (Trifolium repens), locally-frequent creeping thistle (Cirsium arvense), meadow and creeping buttercup (Ranunculus repens) and few other associates. There are one or two small zones where differences in topography produce hillocks or rising ground, which support a more diverse sward. Near the Hall is a steep bank of calcareous grassland with tor grass (Brachypodium pinnatum), upright brome (Bromopsis erecta), common knapweed (Centaurea nigra), ox-eye daisy (Leucanthemum vulgare), bird's-foot trefoil (Lotus corniculatus), meadow vetchling (Lathyrus pratensis), cowslip (Primula veris), salad burnet (Sanguisorba minor) and one or two plants of green hellebore (Helleborus viridis). By contrast, further down the slope within the cattle-grazed pastures is a stream, the banks of which have an acidic grassland sward.

The stream arises from a spring under shade of crack willows and meanders through a narrow band of cattle-poached areas of swamp and wet grassland with rushes and cuckooflower (Cardamine pratensis), abundant fool's watercress (Apium nodiflorum), scattered common duckweed, soft and hard rush (Juncus effusus and J. Inflexus), brooklime (Veronica beccabunga), locally-abundant creeping buttercup, scattered wavy bittercress (Cardamine flexuosa), plicate sweet-grass (Glyceria notata), greater bird's-foot trefoil (Lotus pedunculatus), bog stitchwort (Stellaria alsine (uliginosa), and marsh foxtail (Alopecurus geniculatus).

The acidic grassland on the steeper banks is dominated by common bent (Agrostis capillaris), sheep's-fescue (Festuca ovina), heath grass (Danthonia decumbens) with sweet vernal-grass (Anthoxanthum odoratum), yellow oat grass (Trisetum flavescens), crested dog's-tail (Cynosurus cristatus). Herbs include locally-frequent cat's-ear (Hypochaeris radicata), tormentil (Potentilla erecta), harebell (Campanula rotundifolia), sheep's sorrel (Rumex acetosella), pignut (Conopodium majus), field woodrush (Luzula campestris), heath speedwell (Veronica officinalis), lesser stitchwort (Stellaria graminea), mouse-ear hawkweed (Pilosella officinarum) and bitter vetch (Lathyrus linifolius). Elsewhere the pasture is less steep and has been fertilized and highly improved and is dominated by perennial ryegrass and soft brome (Bromus hordeaceus) with very little else in the sward. An improved sward also dominated the grassland in the fields to the east of the Hickleton to Barnburgh Road.

The site also contains two areas of open water or wetland, identified on the map. The first of these, a circular ornamental pond near the Hall, has now been drained and grassed over and supports locally-abundant hairy sedge (Carex hirta), tufted hairgrass, cuckoo flower, jointed rush (Juncus articulatus), soft rush, creeping buttercup and square-stemmed St John's-wort (Hypericum tetrapterum). The second open water zone, identified as Loscoe Pond, is located within a zone of grazing pasture. Previous surveys found abundant broad-leaved pondweed (Potamogeton natans) and common duckweed (Lemna minor) in the open water itself, with a fringing extensive zone of emergent branched bur-reed (Sparganium erectum), scattered soft and hard rush and floating sweet-grass (Glyceria fluitans). The spring-fed water supply to the pond had very-recently been diverted away from the pond due to problems caused by unofficial angling and the pond is now dry. Litter and nuisance were becoming detrimental to the grazing stock. The water supply could be re-instated to re-fill the pond in

future if the problems of trespassing can be overcome.

The area around the Hall itself is laid out in ornamental gardens and lawns. Some of the lawns to the east of the Hall have a variety of low-growing lime-loving herb species including yarrow (Achillea millefolium), wild strawberry (Fragaria vesca), rough hawkbit (Leontodon hispidus), common and greater knapweed (Centaurea nigra and C. scabiosa), common cat's-ear (Hypochaeris radicata), ox-eye daisy, bird's-foot trefoil, field woodrush, mouse-ear hawkweed, hoary plantain (Plantago media), cowslip, self-heal, orange hawkweed (Pilosella aurantiaca), bulbous buttercup (Ranunculus bulbosus), meadow buttercup, sweet violet (Viola odorata), early dog violet (Viola reichenbachiana) and grasses of calcareous swards, such as quaking grass (Briza media), Lady's mantle (Alchemilla sp.) was also found in previous surveys. A slightly-less diverse, more-neutral grassland is found around the Churchyard although the profusion of ox-eye daisy is allowed to flower in early summer.

Photos and Target Notes:

N1 Possible Sium latifolia (or Berula?) at SE4814804465
TN2 Bitter vetch on unimproved grassy bank at SE4812304433
TN3 Species-rich grassy bank at SE4805304488
TN4 Caltha palustris in stream side wetlands at SE4787104566
TN5 Mature hornbeam trees at SE4775704626
TN6 Hypericum pulchrum at SE4766604252
TN7 Helleborus viridis at SE4816604749
TN8 Helleborus viridis at SE4816704782
TN9 Ranunculus auricomus near ornamental pond at SE4814505085
TN10 Japanese Knotweed near garden waste dumping area at SE4804505103

SBRC local Wildlife Sites Plan

