

A1 Birtley to Coal House

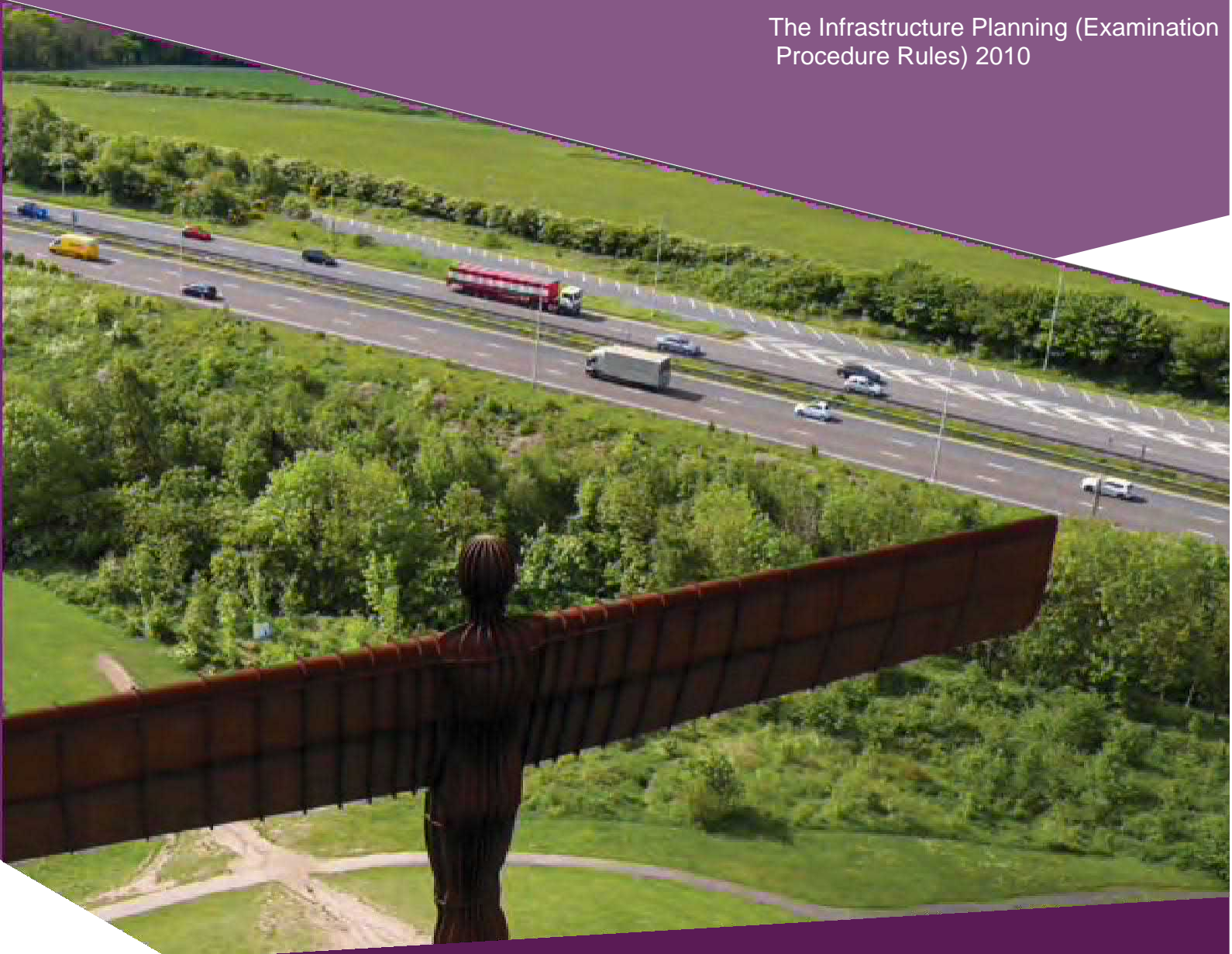
Scheme Number: TR010031

ES Addendum: Additional Land

APFP Regulation 5(2)(a)

Planning Act 2008

The Infrastructure Planning (Examination
Procedure Rules) 2010



Infrastructure Planning

Planning Act 2008

**The Infrastructure Planning
(Examination Procedure Rules) 2010**

A1 Birtley to Coal House
Development Consent Order 20[xx]

ES Addendum: Additional Land

Regulation Reference:	APFP Regulation 5(2)(a)
Planning Inspectorate Scheme Reference	TR010031
Application Document Reference	EXA/D4/009
Author:	A1 Birtley to Coal House Project Team, Highways England

Version	Date	Status of Version
Rev 0	April 2020	Examination Deadline 4

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1. INTRODUCTION

1.1. PURPOSE OF THE ES ADDENDUM

- 1.1.1. This Environmental Statement Addendum (this "ES Addendum") to the Environmental Statement (ES) supports a request to amend an application for development consent.
- 1.1.2. An application for development consent, which included an ES, was submitted to the Secretary of State for Transport via the Planning Inspectorate (the "Inspectorate") on 14 August 2019 for the A1 Birtley to Coal House Scheme ("the Scheme"). A full description of the Scheme can be found at **Chapter 2: The Scheme** of the ES [APP-023]. The ES sets out the findings of the Environmental Impact Assessment (EIA) that was carried out for the Scheme.
- 1.1.3. The application was accepted for Examination in September 2019.
- 1.1.4. Further design development has continued to be undertaken by Highways England ("the Applicant") and its advisers since the application for a Development Consent Order (DCO) was made in order to release efficiencies and design benefits. Temporary possession of the additional land will enable the overall construction programme to be reduced by up to six months, resulting in a thirty month construction programme, as compared to the thirty six month construction programme as assessed in the ES. This is particularly important in optimizing a scheme being delivered by the public sector in the public interest.
- 1.1.5. The proposed amendment to the application that this document relates to is as follows:
 - a. The inclusion of additional land within the application at junction 67 (Coal House) to be used for material stockpiling . This land currently sits outside the proposed Order Limits and it is proposed that powers of temporary occupation are extended to the land during construction of the Scheme. As per the ES, the term Order Limits is referred to as the 'Scheme Footprint' throughout this document.
- 1.1.6. The details of the additional land are described in **Section 2, The Scheme** of this report and the layout of the additional land is provided in **Appendix E, Figure 2.1: Scheme Location Plan**.
- 1.1.7. The purpose of this ES Addendum is to ensure that the environmental impacts of the proposed amendment have been appropriately assessed with any likely significant environmental effects identified, and to satisfy the requirements of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (EIA Regulations).
- 1.1.8. This ES Addendum presents an assessment of the likely significant effects as a result of the inclusion of the additional land in the application. It is not a duplication of the ES and should be read in conjunction with the ES.

1.2. SCOPE OF THE ES ADDENDUM

- 1.2.1. In order to understand if there would be significant environmental effects as a result of the inclusion of the additional land in the application, a desktop assessment was carried out.

The purpose of the desktop assessment was to consider whether the additional land would alter the conclusion of the EIA already undertaken and reported in the ES. The outcome of the desktop assessment then informed a scoping exercise to identify if further EIA, in accordance with the EIA Regulations, would be required. The findings of the scoping exercise are presented in **Appendix A, Additional Land: Desktop Assessment and Scoping Report**.

- 1.2.2. **Appendix A, Additional Land: Desktop Assessment and Scoping Report** of this ES Addendum indicated that the additional land has the potential to change the conclusions of **Chapter 6: Cultural Heritage** of the ES [APP-027], **Chapter 7: Landscape and Visual** of the ES [APP-028], **Chapter 8: Biodiversity** of the ES [APP-029] and **Chapter 12: Population and Human Health** of the ES [APP-033]. This ES Addendum therefore presents an assessment of the likely significant effects as a result of the additional land upon these environmental topics.

APPROACH TO THE ASSESSMENT

- 1.2.3. The assessment has been carried out in line with the methodologies described in the ES, using the professional judgement of the competent experts detailed within the ES, unless otherwise stated in the relevant technical chapters in this ES Addendum.

1.3. CONSULTATION

- 1.3.1. Consultation was undertaken during the scoping exercise, as reported in **Appendix A, Additional Land: Desktop Assessment and Scoping Report**. Where the impacts and residual significant effects were deemed to be comparable to those already assessed in the ES, no consultation was undertaken.
- 1.3.2. A summary of consultation undertaken is presented in **Table 1-1** below. In addition, comments on the Scheme have been addressed within the Consultation Statement [EXA/D4/004].

Table 1-1 - Summary of Consultation by Topic

Technical Area	Date / Method of Contact	Consultee / Name of Consultee	Overview of Consultation
Air Quality			
No consultation required for the additional land assessment.			
Cultural Heritage			
Cultural Heritage	24/01/2020 - Email	Clare Richardson – Gateshead Council	<p>Key topic</p> <p>Highlighting the changes to the Scheme Footprint to include the additional land requirements for the construction period.</p> <p>Key outcome</p>

Technical Area	Date / Method of Contact	Consultee / Name of Consultee	Overview of Consultation
			It was noted that intrusive groundworks should remain outside of the conservation area in order to minimise potential impacts to extant ridge and furrow earthworks.
Cultural Heritage	23/01/2020 - Telephone and email	Rachel Grahame – Tyne and Wear Archaeology Officer	<p>Key topic</p> <p>Highlighting the changes to the Scheme Footprint to include the additional land requirements for the construction period.</p> <p>Key outcome</p> <p>A programme of geophysical survey was agreed to understand the impacts to any previously unrecorded buried archaeology. In addition, topographical survey was agreed to record any extant earthworks related to the medieval village at Lamesley.</p>
Cultural Heritage	06/02/2020	Rachel Grahame – Tyne and Wear Archaeology Officer	<p>Key topic</p> <p>Confirmation of additional land survey and impacts to ridge and furrow</p> <p>Key outcome</p> <p>It is thought that the conservation area boundary denotes the edge of the extant earthworks relating to the medieval village. Therefore, the additional land will be outside of the area of ridge and the HER will be revised accordingly.</p>
Cultural Heritage	06/04/2020	Rachel Grahame – Tyne and Wear Archaeology Officer	<p>Key topic</p> <p>Consultation on any additional work required on the additional land</p> <p>Key outcome</p> <p>The Archaeology Officer has confirmed that following the results of the Geophysical survey (refer to Appendix B), no further work is required on the additional land.</p>
Landscape and Visual			

Technical Area	Date / Method of Contact	Consultee / Name of Consultee	Overview of Consultation
Landscape and Visual	27/01/2020 – Telephone	Janet Charlton-Gateshead Council	<p>Key topic</p> <p>Feedback was provided on the design of the temporary bunds and potential additional land layout. Concerns were raised over issues of additional lighting and opportunities for temporary enhancements through seeding of bunds. The scope of the assessment to include construction only to reflect the temporary nature of the impacts.</p> <p>Key outcome</p> <p>The above was agreed with Gateshead Council.</p>
Biodiversity			
Biodiversity	28/02/2020 and 14/04/2020 emails	Peter Shield – Gateshead Council	<p>Key topics</p> <p>Highlighting the changes to the Scheme Footprint to include the additional land for the construction period. Confirmation of survey recommendations.</p> <p>Key outcome</p> <p>Awaiting response.</p>
Biodiversity	28/02/2020	Andrew Whitehead – Natural England	<p>Key topics</p> <p>Highlighting the changes to the Scheme Footprint to include the additional land for the construction period. Discussion involved scoping of survey requirements.</p> <p>Key outcome</p> <p>Natural England has requested clarification on bat survey approach. No other comments have been raised.</p>
Biodiversity	03/03/2020	Annie Ivison – Natural England	<p>Key topics</p> <p>Natural England have requested further information on the bat survey effort.</p> <p>Key outcome</p> <p>Natural England have confirmed that they are satisfied with the survey effort and</p>

Technical Area	Date / Method of Contact	Consultee / Name of Consultee	Overview of Consultation
			proposed mitigation, compensation and enhancement.
Geology and Soils			
Geology and Soils	24/01/2020 - email	Coal Authority – Chris MacArthur	<p>Key topics</p> <p>The presence of development high risk areas linked to coal outcrops within the additional land does not require further Coal Mining Risk Assessment (CMRA) due to temporary nature of the proposed development.</p> <p>Key outcome</p> <p>Confirmation that a CMRA is not required.</p>
Material Resources			
No consultation required for the additional land assessment.			
Noise and Vibration			
No consultation required for the additional land assessment.			
Population and Human Health			
No consultation required for the additional land assessment.			
Road Drainage and the Water Environment			
No consultation required for the additional land assessment.			
Climate			
No consultation required for the additional land assessment.			
Cumulative and Combined			
No consultation required for the additional land assessment.			

- 1.3.3. A non-statutory targeted consultation was undertaken for 28 days starting on 17 March 2020 and ending on 14 April 2020. The targeted consultation was undertaken with the relevant persons identified in s42 (a) to (d) of the Planning Act 2008 and recommended by the Examining Authority (ExA) in its Rule 8 letter dated 28 January 2020.

1.4. STRUCTURE OF THE ES ADDENDUM

1.4.1. This ES Addendum includes the following:

- a. ES Addendum Main Text, setting out the environmental assessment.
- b. ES Addendum Technical Appendices (including ES Addendum Figures)
 - i. **Appendix A:** Additional Land: Desktop Assessment and Scoping Report
 - ii. **Appendix B:** Geophysical Survey Report
 - iii. **Appendix C:** Preliminary Ecological Appraisal (PEA)
 - iv. **Appendix D:** Visual Effects Schedule
 - v. **Appendix E:** ES Addendum Figures
 - vi. **Appendix F:** Register of Environmental Actions and Commitments (REAC)
 - vii. **Appendix G:** Wintering Birds Report
 - viii. **Appendix H:** Arboricultural Report
- c. Non-Technical Summary (NTS)

1.4.2. The ES Addendum Main Text follows the content structure set out below:

- a. **Chapter 1** – Introduction to this ES Addendum including the purpose of the document, a brief overview of the Scheme, the scope of the assessment and a summary of consultation
- b. **Chapter 2** – The Scheme provides a description of the Scheme
- c. **Chapter 3 – 6** details the EIA process, legislative and policy framework, methodology, design, mitigation and enhancement measures and the likely significant effects for each of the environmental topics assessed in this ES Addendum, namely
 - i. Chapter 3 Cultural Heritage
 - ii. Chapter 4 Landscape and Visual
 - iii. Chapter 5 Biodiversity
 - iv. Chapter 6 Population and Health
- d. **Chapter 7** – Combined Assessment details the methodology and outcomes of the assessment of cumulative and in-combination effects
- e. **Chapter 8** – Summary provides a summary of the likely significant effects reported in this ES Addendum
- f. **Chapter 9** – Abbreviations
- g. **Chapter 10** – References

1.4.3. Within each chapter of this ES Addendum, updated information is presented under the same section headings as the original assessment of the ES. Where text has not changed, it is stated under the section headings, unless otherwise indicated.

2. THE SCHEME

2.1. INTRODUCTION

- 2.1.1. The content of **Chapter 2: The Scheme** of the ES [APP-023] remains unchanged and valid, with the exceptions of the additions and changes outlined below.

2.2. NEED FOR THE SCHEME

JUSTIFICATION FOR ADDITIONAL LAND

- 2.2.1. The Applicant is proposing to seek temporary possession powers over additional land to accommodate a temporary material stockpile during construction of the Scheme. This will enable the main contractor, who will construct the Scheme, to shorten the programme for construction of the proposed earth embankment for the new Allerdene Bridge to the west of the East Coast Mainline (ECML).
- 2.2.2. Temporary land was identified in **Chapter 2: The Scheme, Section 2** of the ES [APP-023] and on **Figure 2.3: Site Compound Plan** of the ES [APP-040] for construction compounds at four sites along the route of the Scheme. These were land south-east of junction 67 (Coal House), in fields north-east of junction 66 (Eighton Lodge), north of Longbank Bridleway Underpass and to the east of Allerdene Bridge. Two of these locations can be used for site compounds accommodating stockpiles, laydown areas and other facilities.
- 2.2.3. Following a review of the current compounds by the main contractor, it was identified that the compound on land south-east of junction 67 (Coal House) does not have sufficient space to accommodate an optimised stockpile. The other areas are not suitable due to distance from Allerdene Bridge and location of the proposed embankments. Also, they are not directly adjacent the works area and they do not have sufficient space; this would result in smaller stockpiles away from Allerdene which would require further double handling of material to transport it to the works area via the local road network.
- 2.2.4. A larger material stockpile area, in the form of the additional land, adjacent to the Scheme Footprint at Allerdene would reduce the number the vehicle movements on the A1, compared to smaller stockpiles be adopted along the corridor of the A1 with the existing compound arrangement. The just-in-time delivery approach for the embankment fill material would increase the peak vehicle movements on the A1. The use of a larger stockpile area, created over a longer period of time adjacent the works, would remove the peak construction traffic on the A1, but 'smooth' it over a longer period of time lessening the impact on road users and sensitive receptors. The larger stockpile would enable construction plant used for earthworks operations to work more efficiently than placing the same material at a slower rate when relying upon the material to be transported to the deposition area at a just-in-time fashion.
- 2.2.5. Temporary possession of the additional land would enable the overall construction programme to be reduced by up to six months, resulting in a 30-month construction programme, compared to a 36-month construction programme.

2.2.6. The benefits sought by this proposed change would be to:

- a. Reduce the impact to road users as the duration of the temporary traffic management and road works on the A1 main line will be reduced accordingly. This will enable road users to enjoy the journey time savings from the new road six months earlier than planned.
- b. Reduce the length of disruption to residents and in particular those who live alongside the A1.
- c. Reduce the length of time that the Scheme requires possession of other temporary land. This will enable the Scheme to return the land back to its original state and the land owners to recommence enjoyment of their land up to six months earlier than originally planned.
- d. Realise the economic benefits that the Scheme will deliver to the local area, and in support of the local plan, up to six months earlier than originally planned.

2.3. SCHEME LOCATION

2.3.1. The Scheme would remain between junction 68 (Lobley Hill) grid reference 423862, 560224 and junction 65 (Birtley), grid reference 428340, 556306, in the metropolitan borough of Gateshead and would be approximately 6.5km in length.

2.3.2. The boundary of the additional land is provided in **Appendix E, Figure 2.1: Scheme Location Plan** of this ES Addendum. The boundary of the additional land is shown in green.

2.3.3. The remaining content of **Chapter 2: The Scheme, Section 2.3** of the ES [APP-023] remains unchanged and valid.

SCHEME FOOTPRINT

2.3.4. The amended Scheme Footprint is shown in **Appendix E, Figure 2.1: Scheme Location Plan**. The layout of the additional land is provided in **Appendix E, Figure 2.3: Site Compound Plan** of this Addendum.

OVERVIEW OF SURROUNDING AREA

2.3.5. The additional land, along with an area immediately to the west, is currently used for horse grazing and there are horse stables associated with this land use to the south west. There are marshy areas within the additional land, as well as in the grazed land to the north and west. The marshy area within the additional land discharges to a culvert beneath Lamesley Road, which discharges across the ground surface to the River Team. A hedgerow runs through the east of the additional land from north to south.

2.3.6. The additional land is bounded to the west by grazed agricultural land and the Lamesley Conservation Area (CA). There is a proposed corridor included within the additional land to allow for maintenance of the drainage from the attenuation pond which crosses the CA. Further west of the additional land is St Andrews Church Hall and residential properties which are located along Lamesley Road. To the south west is Lamesley Meadows Local

Wildlife Site (LWS), located on the junction of Lamesley Road and Hags Lane. The additional land is bounded to the north by agricultural land with the A1 beyond.

- 2.3.7. The additional land is bounded by Smithy Lane and Network Rail land (including the ECML) to the south and east respectively. Smithy Lane Overbridge is to the south east of the additional land, with Longacre Wood LWS beyond. St Andrews Church and Temple Meads, a grade II listed building, are to the south of the additional land and Smithy Lane. They are located on Lamesley Road. There are three veteran trees recorded nearby – two within the grounds of St Andrews Church and Temple Meads, and one within the field to the south of Lamesley Road close to the River Team.
- 2.3.8. The location of sensitive environmental receptors potentially affected by the additional land are shown in **Appendix E, Figure 2.2 Environmental Constraints Plan**.

2.4. SCHEME DESCRIPTION

OVERVIEW

- 2.4.1. The content of **Chapter 2: The Scheme, Section 2.5** of the ES [APP-023] remains unchanged and valid, with the exception of the additions and changes outlined below.
- 2.4.2. The General Arrangement Plans [APP-010] illustrates the main components of the Scheme and an updated drawing has been submitted at Deadline 4 of the Examination.

2.5. LAND USE REQUIREMENTS

- 2.5.1. The land use requirements set out in **Chapter 2: The Scheme, Section 2.6** of the ES [APP-023] would be amended by the additional land. These changes relate to temporary land requirements only as outlined in **Table 2-2** and **paragraphs 2.6.3** and **2.6.6** of **Chapter 2: The Scheme** of the ES [APP-023].
- 2.5.2. In addition to the 24.08 hectares of temporary land described in **paragraph 2.6.3** of **Chapter 2: The Scheme** of the ES [APP-023], 3.9 hectares of temporary land would be required for the extension to the existing site compound at junction 67 (Coal House). This land would be used for the temporary stockpiling of approximately 57,000 m³ of topsoil, subsoil and bulk fill material.

2.6. CONSTRUCTION, OPERATION AND LONG-TERM MANAGEMENT

CONSTRUCTION

Site Mobilisation

- 2.6.1. As set out in **Chapter 2: The Scheme, Section 2.9, paragraphs 2.9.15** of the ES [APP-023], it is anticipated that site mobilisation would include construction of the main site compound and provision of access and egress from the Lamesley Road and that site mobilisation would take approximately 12 weeks. This remains unchanged.
- 2.6.2. The layout of the additional land is provided in **Appendix E, Figure 2.3: Site Compound Plan** of this ES Addendum. The hard-surfaced access track within the existing compound at junction 67 (Coal House) would be extended into the additional land. The additional land

would be fenced. Topsoil bunds 3m high would be established around the perimeter of the stockpile area to screen the properties on Lamesley Road and grass seeded to prevent dust. Stockpiled material would be up to 4.5m high and would be a combination of both granular and cohesive material. Embankment fill material would be placed within a sealed bund.

- 2.6.3. An attenuation pond would be provided to manage temporary drainage and surface water runoff from the additional land. The pond would be excavated into existing ground and an external bund constructed around the perimeter using the excavated arisings. The attenuation pond would be appropriately designed and sized to enable sediments to settle and water to be attenuated without increasing off site flows or sediment loads. The water would flow to the discharge point via gravity.
- 2.6.4. No lighting is proposed for the additional parcel of land required for stockpiling and there would be no night-time activities on the additional land.

Site Demobilisation

- 2.6.5. As set out in **Chapter 2: The Scheme, Section 2.9, paragraphs 2.9.66** of the ES [APP-023] on completion of the construction of the Scheme the construction compounds would be demolished and reinstated to their pre-existing condition.

3. CULTURAL HERITAGE

3.1. INTRODUCTION

- 3.1.1. **Chapter 6: Cultural Heritage** of the ES [APP-027] considers the likely significant effects of the Scheme on Cultural Heritage. This comprises buried heritage assets (archaeological remains) and above ground heritage assets (structures and landscapes of heritage interest) within or immediately around the Scheme. It also considers the impact of the Scheme on the historic character and setting of designated assets within and beyond the Scheme (e.g. views to and from listed buildings and conservation areas).
- 3.1.2. This section of the ES Addendum considers only the likely significant effects of the additional land on Cultural Heritage.

3.2. COMPETENT EXPERT EVIDENCE

- 3.2.1. As detailed in **Table 3-1**, the professionals contributing to the production of this assessment have sufficient expertise to ensure the completeness and quality of this assessment. The table sets out the details of expertise where this is different to those presented in the ES.

Table 3-1 – Cultural Heritage Professional Competence

Name	Role	Qualifications and Professional Membership	Experience
Elizabeth Murray	Author	BA (Hons) Archaeology Associate of the Chartered Institute for Archaeologists (ACiFA)	Five years of relevant EIA experience <ul style="list-style-type: none"> - Heritage specialist on M3 Junction 9 - Heritage specialist on A30 Carland Cross to Chiverton - Heritage specialist on M271 Redbridge Roundabout
Sally Hales	Reviewer	BA (Hons) Archaeology, MA Archaeology. Member of the Chartered Institute for Archaeologists (MCIfA)	25 years professional archaeology experience. Relevant project examples include: <ul style="list-style-type: none"> - Lead for the A5 WTC in NI which included managing the heritage assessment and EIA chapter input, implementation and management of archaeological fieldwork in accordance with the specifications - Expert witness at Public Enquiry - Heritage lead and technical reviewer for A1 Alnwick to

Name	Role	Qualifications and Professional Membership	Experience
			Ellingham and Morpeth to Felton schemes

3.3. LEGISLATIVE AND POLICY FRAMEWORK

- 3.3.1. The legislative and policy framework for Cultural Heritage has not changed since the publication of the ES. Therefore, the text within **Chapter 6: Cultural Heritage, Section 6.3** of the ES [APP-027] remains valid.

3.4. ASSESSMENT METHODOLOGY

- 3.4.1. In order to ensure a comparable assessment with the ES, the assessment methodology followed for Cultural Heritage has not changed in response to the proposed amendments to the Scheme. Therefore, the text within **Chapter 6: Cultural Heritage, Section 6.4** of the ES [APP-027] remains unchanged and valid.
- 3.4.2. The proposed additional land falls within the study area of the ES, for which a broad range of data was collated for the baseline assessment. These sources were consulted for this ES Addendum. The Tyne and Wear Historic Environment Record (HER), which comprises a primary repository of archaeological information, including past investigations, local knowledge, find spots, and documentary and cartographic sources, was consulted to determine whether any new data has been added since the ES.
- 3.4.3. The assessment included a site visit carried out from public rights of way on the 6 February 2020 to determine the topography of the additional land and existing land use, identify any visible heritage assets (e.g. structures and earthworks), and assess factors which may have affected the survival or condition of any known or potential assets.
- 3.4.4. In February 2020, an archaeological geophysical survey and topographical survey was undertaken within the additional land. The results are incorporated into the baseline assessment. The geophysical survey report is provided in **Appendix B, Geophysical Survey Report** of this ES Addendum.

3.5. ASSESSMENT ASSUMPTIONS AND LIMITATIONS

- 3.5.1. The main limitation to the assessment is the nature of the archaeological resource - buried and not visible - which means it can be difficult to predict the presence and likely significance of buried assets accurately, and consequently the impact upon them, based on a desk-based sources. The principal source of information is the HER, which list all known archaeological sites and finds and provides an initial indication of archaeological potential rather than a definitive list of all potential buried heritage assets.
- 3.5.2. A geophysical survey of the additional land has recently been carried out but this revealed no significant anomalies of possible archaeological nature, only a likely minor watercourse

and possible field boundaries. The limitation of this type of survey should be recognised however, as artefactual evidence may not be identified (e.g. concentrations of worked flint), whilst the geology may not be conducive to the identification of anomalies of subsurface features.

- 3.5.3. Notwithstanding this limitation, the methodology is robust, utilising reasonably available information, and conforms to the requirements of local and national guidance and planning policy.

3.6. STUDY AREA

- 3.6.1. The ES study areas of 500m (non-designated heritage assets) and 1km (designated heritage assets), were based on professional opinion as outlined in the guidance presented in HA208/07. Given the contiguous nature of the additional land to the current Scheme Footprint, and the limited nature of the works, the study area has not been expanded beyond that used in the ES.

3.7. BASELINE

- 3.7.1. The baseline conditions setting out the general archaeological and historical background from the prehistoric period to the present day remain unaltered for the additional land. Consultation with the HER revealed no additional information since the ES and the walkover inspection revealed no obvious archaeological features visible as earthworks or areas of significant ground disturbance (e.g. quarrying and landscaping) within the additional land. Therefore, the text within **Appendix 6.1: Historic Environment Desk Based Assessment** of the ES [APP-118] remains valid.
- 3.7.2. The ES concluded that within the area of the additional land there is an uncertain, possibly low, potential to contain possible previously unrecorded prehistoric and Roman remains. The heritage significance of such remains would depend on their nature and extent. There is moderate to high potential to contain evidence of medieval and post-medieval cultivation, such as ridge and furrow (the corrugated earthwork remains of arable cultivation from a horse drawn plough) along with field boundary ditches. The significance of such remains is low, although extant ridge and furrow may be of higher significance, depending on preservation. There is no evidence to suggest well-preserved earthworks on the additional land. The closest historic settlement centre was Lamesley (HER ref. 664), 100m to the south-west, but there is no evidence to suggest that the built-up area of the settlement extended into the additional land, which was peripheral and surrounding open field.
- 3.7.3. In February 2020, an archaeological geophysical (magnetometry) survey and topographical survey was carried out on the additional land, as advised by the Tyne and Wear Archaeology Officer. The geophysical survey revealed very little other than a likely minor watercourse and the location of a former hedgerow. This might not necessarily indicate that no archaeological remains are present, but it does suggest that extensive and particularly significant remains are unlikely to be present.
- 3.7.4. The results of topographical survey did not record any earthworks of archaeological origin within the additional land. The HER Officer confirmed the area of ridge and furrow noted in

the HER (HER Ref 4929) was unlikely to extend outside of the conservation area boundary. It appears likely that the only above ground remnants of the ridge and furrow are confined to the Lamesley Conservation Area (HER ref. 11883) immediately west of the additional land. The results of the surveys can be found at **Appendix B, Geophysical Survey Report** of this ES Addendum.

3.8. POTENTIAL IMPACTS

CONSTRUCTION (TEMPORARY)

- 3.8.1. The setting of designated heritage assets is a material consideration in planning, in the extent to which proposed development would have an impact on the significance of an asset due to changes in its setting and how the asset is understood and appreciated.
- 3.8.2. As detailed in **Section 2, The Scheme** of this ES Addendum the additional land would be used as a temporary site for stockpiling soil. The use of the additional land would have a temporary impact on the current rural nature which creates an important element of the setting of the adjacent Lamesley Conservation Area (HER ref 11883), as it is notably separate from the industrialised areas to the north. Views out over the rural fringe of the village would be interrupted by the presence of stockpiles of soil up to 4.5m in height.
- 3.8.3. No other designated or non-designated heritage assets would be affected by the construction phase works in terms of temporary setting impacts.

CONSTRUCTION (PERMANENT)

- 3.8.4. Any ground disturbance during the construction phase has the potential to result in permanent loss, truncation and/or disturbance to known or possible buried archaeological remains. Works that have the potential to impact upon any remains present include ground levelling, topsoil stripping, and the installation of drainage channels and the attenuation pond.
- 3.8.5. There will be direct physical impacts to possible remains of medieval ridge and furrow. Although this is noted on the HER as extending into the additional land (HER ref. 4929), the site visit carried out for this ES Addendum and topographic survey indicate that there are no significant extant earthwork remains within the additional land. However, there is potential for such remains to survive below ground (e.g. the bases of the furrows). Any ground works on the additional land will result in the levelling of areas of ridge and furrow, the impacts would be permanent and irreversible. Discussions with the Tyne and Wear Planning Archaeologist suggest that the conservation area boundary forms the limit of the extant ridge and furrow associated with Lamesley medieval village. In addition, it was noted that the HER entry for the ridge and furrow (HER Ref 4929) was outdated and potentially required revisions (reductions) to better reflect the current extent of the ridge and furrow.
- 3.8.6. The proposed construction phase works would have a direct impact on possible, previously unrecorded buried heritage assets, within the additional land, would be permanent and irreversible. Works that have the potential to impact upon any remains present include ground levelling, topsoil stripping, and the installation of drainage channels and the attenuation pond. It is anticipated that changes to drainage patterns and groundwater levels

would have negligible impacts on in situ buried archaeological remains. Whilst the potential for previously unrecorded remains dating to the prehistoric and Roman periods is uncertain, it is probably low for significant remains based on the result of the geophysical survey (Refer to **Appendix B, Geophysical Survey Report** of this ES Addendum).

OPERATION

- 3.8.7. There will be no additional impacts from the additional land during the operational phase of the Scheme. There would be no further ground disturbance and thus no additional impacts on buried heritage assets. The stockpile and construction works are temporary, and the field would revert back to its pre-existing condition. Consequently, there would be no impacts on the setting of nearby designated heritage assets.

3.9. DESIGN, MITIGATION AND ENHANCEMENT MEASURES

- 3.9.1. An appropriate mitigation strategy would aim to offset or reduce any adverse environmental effect.

CONSTRUCTION (TEMPORARY)

- 3.9.2. Following the completion of construction, the additional land would be returned to its pre-existing condition. This would reverse those impacts to the setting of Lamesley Conservation Area caused by the presence of the compound.

CONSTRUCTION (PERMANENT)

- 3.9.3. Where feasible, any ground disturbance to the areas of extant remnant ridge and furrow (HER ref. 4929) earthworks would be avoided. However, following site inspection and the topographical survey, it appears unlikely that any extant earthworks survive within the area of the additional land. The Outline Construction Environmental Management Plan (CEMP) will include a measure to specify that there will be no intrusive groundwork within Lamesley Conservation Area.
- 3.9.4. A geophysical survey has been undertaken to investigate the potential for buried archaeological remains (refer to **Appendix B, Geophysical Survey Report**). The results have revealed very little of any archaeological significance. The Tyne and Wear Archaeological Officer confirmed that no further work is required (see **Table 1-1**) with respect to the additional land.

3.10. ASSESSMENT OF LIKELY SIGNIFICANT EFFECTS

CONSTRUCTION (TEMPORARY)

- 3.10.1. The use of the additional land for the stockpiling of soil, would temporarily impact the setting of Lamesley Conservation Area (HER Ref. 11883). The asset is of medium value and the temporary impact to the setting of the asset would be moderate. This would result in a **moderate adverse** (significant) effect compared to the minor adverse effect reported in Chapter 6: Cultural Heritage of the ES [**APP-027**].

CONSTRUCTION (PERMANENT)

- 3.10.2. Any ground disturbance to the additional land, would result in the loss of any buried remains of ridge and furrow (HER Ref. 4929), dating to the medieval period. There is no significant earthwork survival above ground. Buried remnants of the asset would be of low value and the impact would be up to major adverse (i.e. partial or complete removal). There would be a **minor adverse** (not significant) effect. This would be offset to negligible should any archaeological investigation and recording be undertaken in agreement with the Tyne and Wear Archaeological Officer.
- 3.10.3. Following the programme of geophysical survey, the potential for previously unrecorded remains is considered to be low and no further investigation or recording is required. In the unlikely event that buried remains are uncovered, any remains present would be of low or medium value and the impact would be up to major adverse (i.e. partial or complete removal). This would be a **negligible** effect following an agreed mitigation programme of archaeological investigation and recording in agreement with the Tyne and Wear Archaeological Officer as set out in **Section 3.9** of this ES Addendum, and as per the process detailed for 'Unexpected Remains' set out in the Outline Written Scheme of Investigation (WSI) **[EXA/D4/032]** for the Scheme.

3.11. MONITORING

- 3.11.1. The requirement for a programme of any necessary further work, including investigation, mitigation or monitoring, was discussed with the Tyne and Wear Archaeology Officer who confirmed that no further work was required.

4. LANDSCAPE AND VISUAL

4.1. INTRODUCTION

4.1.1. **Chapter 7: Landscape and Visual** of the ES [APP-028] considers the likely significant effects of the Scheme on Landscape and Visual. This section of the ES Addendum considers only the likely significant effects of the additional land on Landscape and Visual.

4.2. COMPETENT EXPERT EVIDENCE

4.2.1. As detailed in **Table 4-1**, the professionals contributing to the production of this assessment have sufficient expertise to ensure the completeness and quality of this assessment. The table sets out details of expertise where this is different to those presented in the ES.

Table 4-1 – Landscape and Visual Professional Competence

Name	Role	Qualifications and Professional Membership	Experience
Sophie Lewis	Author	BA (Hons) Landscape Architecture MA Landscape Architecture CMLI (Chartered member of the Landscape Institute)	Over five years of project experience. Project experience includes responsibility for Landscape Visual Impact Assessment (LVIA) and design inputs for a diverse range of schemes including: <ul style="list-style-type: none"> - A1 Alnwick to Ellingham - Spalding Western Relief Road, Sections 1 and 5; - M1 Junction 19 Improvement scheme; - Botany Bay, Mixed Use Developments, Chorley.
Andrew Williams	Technical Review	BA(Hons) Landscape Architecture Grad Dip (Landscape Architecture) CMLI (Chartered member of the Landscape Institute)	24 years' experience preparing landscape and visual impact assessments for numerous highways schemes including: <ul style="list-style-type: none"> - A9 Dualling Tomatin to Moy (statutory EIA) - Oxon Link Road (statutory EIA) - East Leeds Orbital Road (statutory EIA)

4.3. LEGISLATIVE AND POLICY FRAMEWORK

- 4.3.1. The legislative and policy framework for landscape and visual effects has not changed due to the proposed amendments. Therefore, the text within **Chapter 7: Landscape and Visual, Section 7.3** of the ES [APP-028] remains unchanged and valid for the additional land.

4.4. ASSESSMENT METHODOLOGY

- 4.4.1. In order to ensure a comparable assessment with the ES, the assessment methodology followed for Landscape and Visual has not changed in response to the proposed amendments to the Scheme. Therefore, the text within **Chapter 7: Landscape and Visual, Section 7.4** of the ES [APP-028] remains unchanged and valid.

4.5. ASSESSMENT ASSUMPTIONS AND LIMITATIONS

- 4.5.1. The assessment assumptions and limitations for Landscape and Visual for the additional land have not changed from the ES, with the exception that it is assumed that the hedge within the additional land would be retained, except for widening of an existing gap to allow plant to access the stockpile area and protected during construction. Therefore, the remaining text within **Chapter 7: Landscape and Visual, Section 7.5** of the ES [APP-028] remains unchanged and valid.

4.6. STUDY AREA

- 4.6.1. The study area for the assessment methodology for landscape is the extent of the relevant local landscape character areas impacted by the Scheme, and typically this extends to a buffer of approximately 2km either direction from the Scheme Footprint. The extension of the Scheme Footprint as a result of the additional land would extend the Scheme Footprint by approximately 185m to the south, however this would be contained entirely within the previously identified character areas. As a result, no extension to the Study Area is proposed over that identified within **Chapter 7: Landscape and Visual, Section 7.6** of the ES [APP-028].
- 4.6.2. The study area for the assessment of visual effects has been defined as the extent of the Zone of Visual Influence (ZVI) for the Scheme. The initial Digital Terrain Model based ZVI (refer to **Figure 7.3: Zone of Visual Influence** of the ES [APP-056]) shows the area of land from which there could be a view of any part of the Scheme and is based on Ordnance Survey (OS) Terrain 5 data. This has subsequently been reviewed and refined with site based information to take account of features identified above and is indicated on **Figure 7.3: Zone of Visual Influence** of the ES [APP-056]. Based on this refined ZVI the study area for the assessment of visual effects has not changed due to the additional land. Therefore, the text within **Chapter 7: Landscape and Visual, paragraph 7.6.3** of the ES [APP-028] remains unchanged and valid.

4.7. BASELINE

4.7.1. The baseline landscape and visual conditions have not altered for the additional land. Therefore, the text within **Chapter 7: Landscape and Visual, Section 7.7** of the ES [APP-028] remains unchanged and valid. For clarity, the users or occupants of the visual receptors, identified within **Chapter 7: Landscape and Visual [APP-028]** and **Appendix 7.1: Visual Effects Schedule [APP-121]**, and with a potential view of the additional land have been identified below, along with their sensitivity:

- a. R7 and R8: (High)
- b. R10: (High)
- c. P3: (High)
- d. O5 and O7: (Moderate)
- e. H1 and H2: (Low)

4.8. POTENTIAL IMPACTS

LANDSCAPE

Construction

4.8.1. The stockpiling of material within the additional land, as outlined in **Chapter 2, The Scheme** of this ES Addendum, would result in a physically larger construction area than identified in **Chapter 7: Landscape and Visual, paragraph 7.8.10** the ES [APP-028] resulting in a temporary reduction in the perception of this being a largely rural aspect comprising an area of grazing land south of the Allerdene Bridge, east of Lamesley Lane and north of Smithy Lane. The impact would temporarily affect this area of open land during the construction period and would reduce the perception of this being a rural aspect. There would be no change to the remaining potential landscape impacts set out within **Chapter 7: Landscape and Visual, Section 7.8** of the ES [APP-028]. Therefore, the remaining text remains unchanged and valid.

VISUAL

Construction

4.8.2. The magnitude of impacts to visual amenity are not anticipated to change substantially from that assessed in the ES, if the additional land was used for construction. Reference should be made to **Appendix D, Visual Effects Schedule** of this ES Addendum and **Chapter 7: Landscape and Visual, paragraphs 7.8.57 to 7.8.58** of the ES [APP-028] for the detailed assessment of the Scheme.

4.9. DESIGN, MITIGATION AND ENHANCEMENT MEASURES

4.9.1. Mitigation would comprise the formation of a 3m topsoil bund to the west of the additional land, which would be seeded, to provide some screening to property (R7 and R8) along Lamesley Road which would be implemented at the outset of the temporary works. Additionally, the existing hedgerow within the additional land would be retained except for a 5 – 15m section that is required for access, but that would be replanted with transplants on reinstatement to replicate the section of hedgerow removed. The Arboricultural Report for

the Scheme can be viewed within **Appendix H** of this ES Addendum. The remaining design, mitigation and enhancement measures for landscape and visual effects described in **Chapter 7: Landscape and Visual, paragraph 7.9.3** of the ES [APP-028] have not changed due to the proposed amendments to the Scheme design. Therefore, the remaining text within **Chapter 7: Landscape and Visual, Section 7.9** of the ES [APP-028] remains unchanged and valid.

4.10. ASSESSMENT OF LIKELY SIGNIFICANT EFFECTS

LANDSCAPE

Construction

- 4.10.1. The assessment has identified potential effects to one of the five local landscape character areas, predicted to arise in relation to the additional land during construction. The assessment of the effects, taking into account the mitigation detailed in **Section 4.9** of this ES Addendum, and set out in **Chapter 7: Landscape and Visual, Section 7.8** of the ES [APP-028] would remain valid and in addition have been updated below.

Local Landscape Character Area 1 – Team Valley

- 4.10.2. The temporary impacts reported at **Chapter 7: Landscape and Visual, paragraph 7.10.2** of the ES [APP-028] would remain unchanged as a result of the additional land to be used for stockpiling material. Whilst the additional land would extend the influence of the construction activity to the south, this would be confined physically by Lamesley Lane to the west and Smithy Lane to the south. These changes would be perceived within the context of the construction activity associated with the construction of the Allerdene bridge, the works to the NGN site and the presence of the existing ECML marshalling yard. The overall impacts as a result of the additional land to be used for stockpiling, would result in a **moderate adverse** magnitude of impact in the construction period, which on a landscape of **moderate** sensitivity would result in a **moderate adverse** significance of effect as reported in **Chapter 7: Landscape and Visual** of the ES [APP-028].
- 4.10.3. The effects on the remaining four local landscape character areas have not changed in relation to the additional land. Therefore, the text within **Chapter 7: Landscape and Visual, paragraphs 7.10.5 to 7.10.14** of the ES [APP-028] remains unchanged and valid.

VISUAL

Construction

- 4.10.4. Reference should be made to **Appendix D, Visual Effects Schedule** of this ES Addendum and **Chapter 7: Landscape and Visual, paragraphs 7.10.64 to 7.10.76** of the ES [APP-028]. This identified that the occupants or users of the visual receptors with an awareness of the Scheme as assessed in the ES [APP-028], would not be subject to a significant effect. As a result, the additional land would not give rise to an effect greater than that already identified and reported in the significance of effects in **Chapter 7: Landscape and Visual, paragraphs 7.10.64 to 7.10.76** of the ES [APP-028]. Whilst the additional land

would physically extend the influence of the construction activity, the Scheme is already anticipated to give rise to a significant effect for the following receptors:

- a. R7 and R8: **large adverse** (significant)
- b. R10: **moderate adverse** (significant)
- c. P3: **large adverse** (significant)
- d. O5 and O7: **moderate adverse** (significant)
- e. H1 and H2: **moderate adverse** (significant)

4.11. MONITORING

- 4.11.1. The monitoring requirements for landscape and visual effects have not changed as a result of the additional land. Therefore, the text within **Chapter 7: Landscape and Visual, Section 7.11** of the ES [APP-028] remains unchanged and valid.

5. BIODIVERSITY

5.1. INTRODUCTION

- 5.1.1. **Chapter 8: Biodiversity** of the ES [APP-029] considers the likely significant effects of the Scheme on Biodiversity. This section of this ES Addendum considers only the likely significant effects of the additional land on Biodiversity.

5.2. COMPETENT EXPERT EVIDENCE

- 5.2.1. The competent expert advice for the Biodiversity Assessment has not changed for this assessment. The text within **Chapter 8: Biodiversity, Section 8.2** of the ES [APP-029] remains unchanged and valid.

5.3. LEGISLATIVE AND POLICY FRAMEWORK

- 5.3.1. The legislative and policy framework for Biodiversity has not changed in relation to the additional land. Therefore, the text within **Chapter 8: Biodiversity, Section 8.3** of the ES [APP-029] remains unchanged and valid.

5.4. ASSESSMENT METHODOLOGY

- 5.4.1. In order to ensure a comparable assessment with the ES, the assessment methodology followed for Biodiversity has not changed in response to the proposed amendments to the Scheme. Therefore, the text within **Chapter 8: Biodiversity**, of the ES [APP-029] remains unchanged and valid.

METHODOLOGY

- 5.4.2. The ecological assessment methodology for Biodiversity has not changed for the additional land and the methodology in **Chapter 8: Biodiversity, Sections 8.4** and **Table 8-4** of the ES [APP-029] remains unchanged and valid. However, the survey methods detailed below, include changes to survey dates that were not included within **Chapter 8: Biodiversity** of the ES [APP-029]. Therefore, an update of the survey scope is detailed below.

Field Survey Methodology

- 5.4.3. An extended Phase 1 habitat survey, which included a badger assessment (**Appendix C, Preliminary Ecological Appraisal (PEA)** of this ES Addendum) of the Additional Land Study Area (refer to **paragraph 5.6.1** below) was completed in February 2020 to provide baseline information on the types and distribution of habitats present. Following the extended Phase 1 habitat survey, wintering bird validation surveys were completed on 5 and 27 February 2020, the results of which are detailed within this assessment. A bat preliminary roost assessment of the adjacent trees and buildings was completed in combination with the wintering bird assessment.
- 5.4.4. Surveys were completed in accordance with methods outlined within Bibby et al (2000) (**Ref. 5.1**). A walked transect was completed on each survey visit, to encompass all habitats present within the additional land Study Area.

- 5.4.5. During each visit all birds encountered (i.e. heard and seen) within additional land Study Area (up to approximately 50m away) were counted and identified to species level. Birds flying over the additional land were also recorded. The approximate location of each bird was recorded on a map of the additional land using standard British Trust for Ornithology (BTO) two letter species codes. Additional information on behaviour (e.g. direction of flight, calling or displaying) was also recorded using standard activity symbols (Gilbert et al, 1998) (**Ref 5.2**).

5.5. ASSESSMENT ASSUMPTIONS AND LIMITATIONS

- 5.5.1. For the purpose of this assessment it is assumed that the breeding bird 2018 survey data (**Appendix 8.9: Breeding Bird Report** of the ES [**APP-131**]) can be extrapolated to include the additional land. This is considered appropriate given that habitats within the additional land Study Area and the ES Study Area are immediately adjacent and both consist of grassland with a high-water table. Therefore, as the habitats present within each area would attract the same species, the same species composition as the ES Study Area has been assumed for the additional land Study Area. Breeding bird surveys will be undertaken to validate this assumption as soon as survey conditions allow.
- 5.5.2. Two of three wintering bird surveys have been completed. Given that habitats within the additional land Study Area and the ES Study Area are immediately adjacent and both consist of grassland with a high-water table, as a worst-case scenario to inform this assessment, the same species composition has been assumed. There is no reason to suppose that any additional unusual species would be present on the additional land. The species composition for the ES Study Area is detailed within the Wintering Bird Survey Report (**Appendix 8.10: Wintering Bird Survey Report** of the ES [**APP-132**]).
- 5.5.3. Bat surveys of the buildings and bat boxes immediately adjacent to site have not been completed. As all species recorded within the ES Study Area within the ES are common and widespread throughout England, as a worst-case scenario to inform this assessment, it is assumed that the bat boxes support a roost of a common and widespread species. There is no reason to suppose that any additional unusual species would be present on the additional land.

STUDY AREA

- 5.5.4. If the desk study search radii were updated to be taken from the boundary of the additional land and Study Area (described below), it would result in an extension to the existing desk study search radii of approximately 183m to the south. Such a minor extension of the search radii would not result in the inclusion of any additional statutory or non-statutory sites within the assessment. Additionally, it is considered that as a proportionate approach an extension of this minor amount would not result in an alteration to the impact assessment.
- 5.5.5. Therefore, for the purpose of the desk study, search radii detailed in **paragraph 8.6.1** in **Chapter 8: Biodiversity** of the ES [**APP-29**], which were taken from the edge of the Scheme Footprint, were utilised to inform this assessment. These desk study search radii include the additional land Study Area.

Field Surveys

- 5.5.6. The Study Area for field surveys comprised the additional land only as detailed on **Figure 1 of Appendix C, Preliminary Ecological Appraisal** of this ES Addendum as it was considered that only receptors within the additional land would be affected by the works this follows the same approach as that detailed within **paragraph 8.6.3**, Chapter 8: Biodiversity of the ES [APP-029].
- 5.5.7. This additional land Study Area applies to the Preliminary Ecological Appraisal (PEA) and wintering bird surveys of the additional land. The additional land Study Area will also be utilised for the breeding bird surveys, when undertaken.
- 5.5.8. For the assessments included within the additional land PEA, the additional land Study Area was amended based on likely effects resulting from the Scheme. The following amendments were identified as required:
- a. Building and tree bat roost assessment: additional land Study Area, which is most likely to be impacted or lost, plus 50m. This additional land Study Area is based on professional judgement in accordance with the Bat Conservation Trust Bat Surveys for Professional Ecologists, Good Practice Guidelines (**Ref 5.3**).

5.6. BASELINE

DESIGNATED SITES

- 5.6.1. Changes associated with the additional land assessment, are summarised within **Table 5-1** below. All other baseline conditions described within **Chapter 8: Biodiversity, Section 8.7** of the ES [APP-029] and updated via the Local Wildlife Site Addendum, remain unchanged and valid.
- 5.6.2. Local wildlife sites are of **County** importance, as they form a network of sites within Tyne and Wear that represent sites for animals and plants.

Table 5-1 - Summary of Changes in Distance Measurements of Designated Sites from the Scheme Footprint with the Inclusion of the Additional Land

Site Name	Distance from Additional Land Study Area of the Proposed Amendments to the Scheme design	Designation Criteria
Lamesley Meadows LWS / Lamesley Pastures Site of Nature Conservation Importance (SNCI)	0.08km southwest (reduction in distance by approximately 190m)	A site containing permanent pasture, riverbank, ponds and reed beds. The LWS supports breeding waders including lapwing <i>Vanellus</i> , redshank <i>Tringa tetanus</i> and snipe <i>Gallinago</i> . Otter have also occasionally been recorded in the River Team. Other species recorded

Site Name	Distance from Additional Land Study Area of the Proposed Amendments to the Scheme design	Designation Criteria
		include dunnock <i>Prunella modularis</i> , song thrush <i>Turdus philomelos</i> and hedgehog <i>Erinaceus europaeus</i> .

HABITAT BASELINE

- 5.6.3. **Table 5-2** below lists all habitats within the additional land Study Area and identifies whether they are Habitats of Principal importance (HPI) and whether they are listed within the local biodiversity action plan (LBAP) habitats.
- 5.6.4. HPI are habitats listed under section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 - NERC s.41, **Figure 1 of Appendix C, Preliminary Ecological Appraisal** of this ES Addendum.

Table 5-2 - Summary of Habitats Identified within Additional Land Study Area

Habitat	Habitat of Principal Importance	Local Biodiversity Action Plan Habitat
J2.1.2: Intact Hedge – Species Poor -	✓	✓
Poor Semi-improved Grassland		
G1.3: Ephemeral Stand Water		
C3.1: Other tall herb and fern – ruderal		
A3.1: Scattered Broadleaf Trees		
A2.2: Scattered Scrub		
J3.6: Buildings		
J2.4: Fence		
J2.5: Wall		

- 5.6.5. The majority of the additional land Study Area comprised two poor-semi improved grassland fields used to graze horses. The majority of habitats present within the additional land Study Area are of limited importance and are not considered a constraint to the Scheme. However, the single HPI and local BAP habitat present within the Scheme Footprint is considered to be of **Local** value.

SPECIES ASSESSMENT

- 5.6.6. The PEA (**Appendix C, Preliminary Ecological Appraisal** of this ES Addendum) identified habitat suitable for several species/species groups:

- a. Bats
- b. Breeding birds
- c. Wintering birds

- 5.6.7. Detailed results of the PEA for the protected and notable species present is included within **Appendix C, Preliminary Ecological Appraisal** of this ES Addendum. Wintering bird surveys are summarised in the sections below only.

Bats

- 5.6.8. The biological records included the presence of common pipistrelle *Pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, noctule *Nyctalus noctula*, unconfirmed *Pipistrellus* species and unconfirmed bat species.
- 5.6.9. The additional land Study Area contains two wooden stables, one of which was found to have a bat box installed at the northern gable end, refer to **Figure 1 of Appendix C, Preliminary Ecological Appraisal** of this ES Addendum. There were also two residential buildings directly adjacent to the west of the additional land Study Area. All structures were considered to offer potential suitability for roosting bats. The only species recorded roosting within the Scheme Footprint is common pipistrelle (**paragraph 8.7.31 of Chapter 8: Biodiversity**, of the ES [APP-029]). Therefore, as a pre-cautionary approach, it is assumed that the bat boxes support a roost of a common and widespread species.
- 5.6.10. All species recorded within the ES Study Area are common and widespread throughout England (**Ref 5.4**). Throughout Northumberland (the closest county level status assessment available) both common and soprano pipistrelle are considered to be common and noctule is considered to be scattered (**Ref 5.4**).
- 5.6.11. Given that the 2017 bat activity data was recorded in habitats within 200m to the north and east of the additional land and that the same habitat types were surveyed, it is considered that the bat activity can be extrapolated to include this area of additional land. As the habitats present within each area would attract the same species, the same species composition as the ES Study Area has been assumed for the additional land Study Area. Therefore, no further surveys have been recommended and the text within **Chapter 8: Biodiversity, Section 8.7** of the ES [APP-029] remains unchanged and valid.
- 5.6.12. The suitable foraging and commuting habitats for bats within the additional land Study Area include a hedgerow and woodland to the east of the additional land Study Area, of which

are immature and exposed in nature. Therefore, these habitats are considered to be sub-optimal habitat for bats.

- 5.6.13. Given the information detailed above, that the habitats are sup-optimal in nature and that any potential roosts would likely be of low status of a common and widespread species, the bat population within the Scheme Footprint would be considered to be of **Local** value.

Breeding Birds

- 5.6.14. The breeding bird 2018 survey data (**Appendix 8.9: Breeding Bird Report** of the ES [APP-131]) has been extrapolated to include the additional land. This is considered appropriate given that habitats within the additional land Study Area and the ES Study Area are immediately adjacent and that both consist of grassland with a high-water table. Therefore, as the habitats present within each area would attract the same species, the same species composition as the ES Study Area has been assumed for the additional land Study Area. Therefore, the text within **Chapter 8: Biodiversity, Section 8.7** of the ES [APP-029] remains unchanged and valid.

Wintering Birds

- 5.6.15. **Paragraph 8.7.44** of the ES baseline identified records of 41 protected and/or notable bird species within 2km of the ES Study Area with potential to occur within the additional land Study Area between November and February. These are summarised in **Table 3-4** of **Appendix 8.10: Wintering Bird Survey Report** of the ES [APP-132].
- 5.6.16. The ES Study Area (**Figure 1** of **Appendix 8.10: Wintering Bird Survey Report** of the ES [APP-132]) was identified as a foraging resource for a variety of species of conservation concern. The species identified included black-headed gull *Chroicocephalus ridibundus*, curlew *Numenius arquata*, grey wagtail *Motacilla cinerea*, kestrel *Falco tinnunculus*, lapwing *Vanellus*, mistle thrush *Turdus viscivorus*, starling *Sturnus vulgaris* and woodcock *Scolopax rusticola*.
- 5.6.17. The two wintering bird surveys carried out to date have not recorded any of the species listed above as utilising the additional land Study Area. However, given that habitats within the additional land Study Area and the ES Study Area are immediately adjacent and both consist of grassland with a high-water table, as a worst-case scenario to inform this assessment, the same species composition has been assumed.
- 5.6.18. As detailed in the **Chapter 8: Biodiversity, section 8.9** of the ES [APP-029], all species of conservation concern were identified as being of **Local** importance within the context of this survey. It is therefore considered that the wintering bird community recorded is of **Local** value.

5.7. POTENTIAL IMPACTS

CONSTRUCTION

- 5.7.1. The use of the additional land as a construction compound will result in the temporary loss of hedgerow priority habitat to gain access. Hedgerow loss would be centred around an

existing gap, which measures approximately 3m in width with an existing gate access. This existing gap would be enlarged to allow access for larger construction vehicles.

- 5.7.2. **Table 5-3** below lists the ecological features identified during the baseline assessment of the additional land Study Area and summarises the potential construction impacts for this area, which are to be taken forward in the assessment.

Table 5-3 - Potential Construction Impacts on Ecological Features for Features within the Area of Additional Land

Ecological Feature	Description of potential impacts
Lamesley Meadows LWS/ Lamesley Pastures SNCI	<ul style="list-style-type: none"> – Degradation resulting from disturbance of key species (e.g. noise) during construction phase. – Degradation resulting from airborne pollution during the construction phase.
Habitats of Principal Importance	<ul style="list-style-type: none"> – Direct loss of a section of hedgerow to allow access during the construction phase.
Bats	<ul style="list-style-type: none"> – Direct habitat loss (loss of sub-optimal foraging and commuting habitat) during the construction phase. – Disturbance (noise) to bats during the construction phase, in habitats associated with the recorded bat boxes and adjacent buildings.
Wintering Birds	<ul style="list-style-type: none"> – Direct loss (mortality and injury) during the construction phase. – Direct habitat loss during the construction phase. – Disturbance (noise) during construction phase.

5.8. DESIGN, MITIGATION AND ENHANCEMENT MEASURES

- 5.8.1. In addition to the measures detailed within **Chapter 8: Biodiversity, Section 8.8** of the **[APP-029]**, the following mitigation measures would be implemented. The use of the additional land would result in the loss of habitat, which would be reinstated post-construction, including all hedgerow loss.
- 5.8.2. Mitigation measures that have been developed for the additional land relating to biodiversity during the construction phase are detailed below:
- a. The formation of earth bunding using some of the stockpile material on the perimeter closest to receptors will be a practical and effective mitigation measure. This bund will provide a buffer to construction noise. The bund would comprise the first stockpiled

material to be deposited and the last to be used so that it is effective for the lifetime of the depot use;

- b.** Siting of noise generating plant and equipment to minimise noise at sensitive receptors and consideration of working hours and practices would be taken into account in the additional land compound layout; and
- c.** Minimise dust generating activities, particularly near residential receptors/sensitive ecosystems during prolonged dry, dusty weather and use dust suppression measures including damping down with water, as detailed in **Chapter 5: Air Quality** of the ES [APP-026].

5.9. ASSESSMENT OF LIKELY SIGNIFICANT EFFECTS

CONSTRUCTION

Local Wildlife Site and Site of Nature Conservation Importance

- 5.9.1. The use of the additional land would result in a temporary direct adverse effect, during construction, over the short term on Lamesley Meadows LWS/ Lamesley Pastures SNCI, via the increased disturbance levels. Species that use the LWS may be temporarily disturbed by the works. However, following the successful implementation of the topsoil bund which would act to buffer noise from the additional land, it is considered that the significance of effects would be **neutral** (not significant).

Habitats

- 5.9.2. The use of the additional land would result in the temporary loss of hedgerow to allow access for earth moving vehicles. However, as all habitats lost would be reinstated, following the successful implementation of the mitigation requirements detailed within **section 5.9** of this ES Addendum and **Chapter 8: Biodiversity, section 8.9** of the ES [APP-029], it is considered that the significance of effects of the loss of the habitats within the additional land Study Area would be **neutral** (not significant).
- 5.9.3. The loss of the habitats in the additional land and Study Area would therefore not alter the assessment of significant effects detailed within **Chapter 8: Biodiversity, section 8.10** of the ES [APP-029]. Following the successful implementation of the mitigation requirements detailed within **Chapter 8: Biodiversity, Section 8.9** of the ES [APP-029], it is considered that the impacts of the Scheme would result in effects of **moderate** significance.

Bats

- 5.9.4. The use of the additional land would result in a temporary, indirect, adverse effect during construction on the extant bat population. This is due to the increased disturbance levels. However, following the successful implementation of acoustic design measures for the layout of the additional land, it is considered that the significance of effects would be **neutral** (not significant).

Wintering birds

- 5.9.5. The use of the additional land would result in an extended area of temporary loss of suitable lapwing habitat south of Allerdene Bridge. However, the temporary loss of habitat only

represents a small proportional loss of suitable habitat when placed in context with the wider environment. Therefore, the wintering bird assessment within **Chapter 8: Biodiversity, Section 8.10** of the ES [APP-029] remains unchanged and valid. Following the successful implementation of the mitigation requirements, it is considered that the impacts of the Scheme would result in effects of **neutral** significance (not significant).

5.10. MONITORING

- 5.10.1. The monitoring requirements for biodiversity have not changed as a result of the use of the additional land. Therefore, the text within **Chapter 8: Biodiversity, Section 8.11** of the ES [APP-029] remains unchanged and valid.

6. POPULATION AND HUMAN HEALTH

6.1. INTRODUCTION

6.1.1. **Chapter 12: Population and Human Health** of the ES [APP-033] considers the likely significant effects of the Scheme on Population and Human Health. This ES Addendum chapter considers only the likely significant effects of the additional land on Population and Human Health. The following topic has been scoped into this assessment:

a. Private and Community Land Take (construction)

6.1.2. An assessment of impacts on Agricultural Land Holdings [EXA/D4/033], following new Population and Human Health guidance methodology (Design Manual for Roads and Bridges (DMRB) LA 112), has been carried out for the Scheme and will be provided during Examination. This assessment assesses the eight Agricultural Land Holdings, including this additional land, impacted by temporary and/or permanent land take for the Scheme.

6.2. COMPETENT EXPERT EVIDENCE

6.2.1. As detailed in **Table 6-1**, the professionals contributing to the production of this assessment have sufficient expertise to ensure the completeness and quality of this assessment. The table sets out details of expertise where this is different to those presented in **Chapter 12: Population and Human Health** of the ES [APP-033].

Table 6-1 – Population and Human Health Professional Competence

Name	Role	Qualifications and Professional Membership	Experience
Sheri Shai	Author	<ul style="list-style-type: none"> - BSc (Hons) Environmental Science - MSc Environmental Consultancy - IEMA Graduate 	3 years of experience in preparing ESs, including population and health assessments. Relevant Population and Human Health Experience: <ul style="list-style-type: none"> - A27 Arundel Options Selection Stage 2, population assessment input to population and health chapter - Omega Zone 8 population and health assessment - M4 Junction 15 population and health assessment
Claire Beard	Reviewer	The competent expert advice reviewer for the Population and Human Health Assessment has not changed as a result of this desk top assessment. The text within Chapter 12: Population and Human Health of the ES [APP-033] remains unchanged and valid.	

6.3. LEGISLATIVE AND POLICY FRAMEWORK

- 6.3.1. The legislative and policy framework for Population and Human Health has not changed due to the additional land. Therefore, the text within **Chapter 12: Population and Human Health, Section 12.3** of the ES [APP-033] remains unchanged and valid.

6.4. ASSESSMENT METHODOLOGY

- 6.4.1. In order to ensure a comparable assessment with the ES, the assessment methodology followed for Private and Community Land Take has not changed in response to the proposed amendments to the Scheme. Therefore, the text within **Chapter 12: Population and Human Health, paragraph 12.4.28 and 12.4.29** of the ES [APP-033] remains unchanged and valid.
- 6.4.2. The additional land is classified as agricultural land, and effects associated with agricultural land have been reported in Chapter 9: Geology and soils of the ES [APP-030] while effects on Private and Community land are reported in Chapter 12: Population and Human Health of the ES [APP-033]. Since the publication of the ES, DMRB guidance for Population and Human Health has been updated to include the aspect of “Agricultural Land Holdings”. DMRB LA 112 now provides a methodology for assessing the impact of a Scheme on the viability of a farm holding.
- 6.4.3. In order to ensure that a comparable assessment has been carried out, this addendum assesses the additional land as Private land, following the same methodology as that used in **Section 12.4, Chapter 12: Population and Human Health** of the ES [APP-033]. The more recent guidance (DMRB LA 112) has been applied to all agricultural land, including this additional land, impacted by temporary and/or permanent land take for the Scheme in a separate Agricultural Land Holdings Assessment report [EXA/D4/033].

6.5. ASSESSMENT ASSUMPTIONS AND LIMITATIONS

- 6.5.1. The following assumptions have been made for this assessment:
- a. The impacts on human health as reported in **Section 12.8, Chapter 12: Population and Human Health** of the ES [APP-033] i.e. Moderate adverse (significant) effect during construction, and slight beneficial (not significant) effect during operation, are not anticipated to change as a result of the additional land. This is on the basis that there are no additional adverse effects on air quality and noise resulting from the additional land take as stated in **Section 1.2 Scope** of this ES Addendum and in **Appendix A, Additional Land: Desktop Assessment and Scoping Report**.

6.6. STUDY AREA

PRIVATE AND COMMUNITY LAND TAKE

- 6.6.1. The Study Area for identified private and community land take for this assessment is the additional land only. This is in accordance with DMRB Volume 11, Section 3, Part 6 which

sets out that impacts should be assessed where land is lost temporarily or permanently in order for a scheme to be built.

6.7. BASELINE

PRIVATE AND COMMUNITY LAND TAKE

- 6.7.1. There would be small-scale, temporary loss of private land located to the north of Smithy Lane during construction. This temporary land take is adjacent to the existing construction compound at junction 67 (Coal House) and would be required for material stockpiling; an attenuation pond would also be located here. The additional land is currently utilised for horse grazing with stables to the south west. The additional land is located in proximity to residential properties located off Lamesley Road and Lamesley Childcare centre which is based at St Andrews Church hall.
- 6.7.2. There is no land allocation including employment land or housing land located within the additional land.
- 6.7.3. The inclusion of the additional land does not change the **medium** sensitivity rating assigned to Private and Community land take in **Chapter 12: Population and Human Health, paragraph 12.7.44** of the ES [APP-033].

6.8. POTENTIAL IMPACTS

CONSTRUCTION

Private and Community Land Take

- 6.8.1. 3.9 hectares of temporary land would be required for the extension to the existing site compound at junction 67 (Coal House). This land would be used for the temporary stockpiling of approximately 57,000m³ of topsoil, subsoil and bulk fill material and would be returned to the existing used after construction is complete. The use of the additional land would not result in any demolition of private property.
- 6.8.2. Once the Scheme is operational, there would be no further impacts on Private and Community Land Take associated with the additional land as impacts are temporary and the additional land would be reinstated to its pre-existing condition.

6.9. DESIGN, MITIGATION AND ENHANCEMENT MEASURES

- 6.9.1. The impacts on community and private land take would be mitigated through minimising land take as far as possible and taking measures to ensure that the remaining land area continues to be viable during construction for keeping horses. This measure would be agreed through engagement with private landowners.
- 6.9.2. The additional land would be reinstated to its pre-existing condition.

6.10. ASSESSMENT OF LIKELY SIGNIFICANT EFFECTS

CONSTRUCTION

Private and Community Land Take

- 6.10.1. There would be temporary land take during construction from an area currently used for horse grazing; although an area outside the additional land would still be available for the horses, it would be smaller than is currently available. However, all land will be reinstated to the pre-existing condition. Following implementation of mitigation, it is considered that the magnitude of impact remains minor. The likely significant effects on private and community land take during construction would therefore remain the same as those assessed in **Chapter 12: Population and Human Health, paragraph 12.10.35** the ES [APP-033] which would be a temporary, **slight adverse** effect during construction (not significant).

6.11. MONITORING

- 6.11.1. The monitoring requirements for population and human health have not changed due to the additional land. Therefore, the text within **Chapter 12: Population and Human Health, Section 12.11** of the ES [APP-033] remains unchanged and valid.

7. COMBINED ASSESSMENT

7.1. INTRODUCTION

7.1.1. **Chapter 15: Combined and Cumulative Assessment** of the ES [APP-036] assessed the likely significant effects of the Scheme as a result of combined and cumulative impacts. This ES Addendum chapter considers only the likely significant effects only considers the likely significant effects of the additional land as a result of combined impacts as cumulative impacts have been scoped out.

7.2. COMPETENT EXPERT EVIDENCE

7.2.1. As detailed in **Table 7-1**, the professionals contributing to the production of this assessment have sufficient expertise to ensure the completeness and quality of this assessment. The table sets out details of expertise where this is different to those presented in the ES.

Table 7-1 - Combined and Cumulative Professional Competence

Name	Role	Qualifications and Professional Membership	Experience
Nicola Ashworth	Reviewer	<ul style="list-style-type: none"> - BSc in Geography - MSc in Environmental Engineering - Member of the Institute of Environmental Management and Assessment (IEMA) - Chartered Environmentalist (CEnv) 	19 years' experience. Relevant project examples include: <ul style="list-style-type: none"> - Environmental assessment lead for the Scheme at Options Selection. - Environmental coordinator for A1 Coal House to Metro Centre Improvement scheme (Construction Preparation stage) Environmental Assessment Lead for A19 A1058 Coast Road Junction Improvement scheme (Preliminary Design stage to Construction, Commissioning & Handover).

7.3. LEGISLATIVE AND POLICY FRAMEWORK

7.3.1. The legislative and policy framework for the Combined Assessment has not changed as a result of the additional land. Therefore, the text within **Section 15.3, Chapter 15: Cumulative and Combined Assessment** of the ES [APP-036] remains unchanged and valid.

7.4. ASSESSMENT METHODOLOGY

- 7.4.1. In order to ensure a comparable assessment with the ES, the assessment methodology followed for the Combined Assessment has not changed in response to the proposed amendments to the Scheme. Therefore, the text within **Section 15.4, Chapter 15: Cumulative and Combined Assessment** of the ES [APP-036] remains unchanged and valid.

7.5. ASSESSMENT ASSUMPTIONS AND LIMITATIONS

- 7.5.1. The assessment assumptions and limitations for Combined Assessment have not changed from the ES, with the exception that:
- a. The assessment of combined effects resulting from the additional land has focused on the residual effects from the construction phase following the implementation of mitigation measures. There is an assumption that all proposed mitigation measures identified in **Chapters 5-14** of the ES and **Chapters 3-6** of this ES Addendum would be delivered.
- 7.5.2. The remaining text within **Section 15.5, Chapter 15: Cumulative and Combined Assessment** of the ES [APP-036] remains unchanged and valid.

7.6. STUDY AREA

- 7.6.1. The Study Areas used for the Combined Assessment are the same as those identified within each of the technical sections in **Appendix A, Additional Land: Desktop Assessment and Scoping Report** and **Chapters 3-6** of this ES Addendum.

7.7. BASELINE

- 7.7.1. The baseline for the combined effects is described in the technical chapters of **Appendix A, Additional Land: Desktop Assessment and Scoping Report** and **Chapters 3-6** in this ES Addendum.

7.8. ASSESSMENT OF COMBINED EFFECTS

- 7.8.1. A review of the technical assessments reported in **Appendix A, Additional Land: Desktop Assessment and Scoping Report** and **Chapters 3-6** of this ES Addendum has been undertaken in order to identify new or different environmental effects, or those that could combine to result in an effect of greater significance. These combined effect interactions are detailed in **Table 7-1** below:

Table 7-1 - Matrix of Combined Effect Interactions during Construction

Common Sensitive Receptors	Impacts	Air Quality	Cultural Heritage	Landscape and Visual	Biodiversity	Population and Human Health	Noise and Vibration	Combined Effect
Residents (Lamesley Road) and Community Facilities (Lamesley Childcare centre)	<ul style="list-style-type: none"> – Impacts to human health from construction related noise and dust at adjacent residential properties and Lamesley Childcare. – Noise at adjacent residential receptors (Four dwellings to the north of St Andrews Church, Lamesley Road) during site mobilisation and de-mobilisation management and distribution of material stockpiles. – Changes to surrounding landscape setting and views due to the use of the additional land take for the stockpiling of soil. This would be altered by the creation of topsoil bunds up to 4.5m in height in Lamesley Conservation Area (CA). 	√		√		√	√	Potential for temporary adverse/combined effects during construction. With the implementation of mitigation measures in the CEMP for the Scheme, the combined effect would be of minor significance (not significant).
Areas of amenity surrounding the Scheme	<ul style="list-style-type: none"> – Temporary impacts to surrounding landscape setting and views due to the creation of topsoil bunds up to 4.5m in height in Lamesley CA. – Noise from additional Heavy Good Vehicles (HGV) movements in front of the receptors to the west of the additional compound based on 56 HGV deliveries per day during peaks. – Potential for increased level of disturbance with Lamesley Meadows LWS and Lamesley Pastures SNCI as a result of degradation of the habitats due to airborne pollution during the construction phase. – Temporary loss of private land. 			√	√	√	√	Potential for temporary adverse/combined effects during construction. With the implementation of mitigation measures in the CEMP for the Scheme, the combined effect would be of minor significance (not significant).
Users of footpaths (walking, cycling and horse riding)	<ul style="list-style-type: none"> – Temporary impacts to surrounding landscape setting and views due to the creation of topsoil bunds up to 4.5m in height in Lamesley CA. – Impacts to human health from construction related noise and dust. 			√		√	√	Potential for temporary adverse/combined effects during construction. With the implementation of mitigation measures in the CEMP for the Scheme, the combined effect would be of minor significance (not significant).

7.9. MITIGATION AND MONITORING

- 7.9.1. The mitigation or monitoring requirements for the combined effects have not changed due to the additional land. Therefore, the text within **Section 15.10, Chapter 15: Cumulative and Combined Assessment** of the ES [APP-036] remains unchanged and valid.

8. SUMMARY

8.1. INTRODUCTION

- 8.1.1. **Chapter 16: Summary** of the ES [APP-037] describes the likely significant effects of the Scheme reported in **Chapter 16: Summary** the ES [APP-037].
- 8.1.2. A summary of the likely significant effects as a result of the additional land is presented below. All other conclusions within **Chapter 16: Summary** of the ES [APP-037] remain valid.

8.2. SUMMARY

CULTURAL HERITAGE

- 8.2.1. The construction on, and use of, the additional land would create adverse impacts to the setting of Lamesley Conservation Area, an asset of medium value. The presence of the compound and its use for stockpiling of materials would result in a temporary moderate adverse impact, resulting in a **moderate adverse** effect (significant). These effects would be temporary and would be mitigated when the additional land is returned to pasture.
- 8.2.2. The topographical survey has confirmed that there are no extant earthwork remains of ridge and furrow within the additional land, outside of the conservation area. There is therefore no impact on earthwork remains.
- 8.2.3. There is the potential for previously unrecorded buried archaeology to be present within the area of additional land, particularly remains dating from the medieval period or earlier. Impacts could be as high as major adverse, where assets are removed in their entirety. The geophysical survey suggests that there are no remains of archaeological value within the additional land. The necessity for any further work, to confirm these results, will be discussed with the Tyne and Wear Archaeology Officer. The outcome of this consultation would be fed into the outline detailed WSI, where necessary, to be submitted as part of the DCO application.

LANDSCAPE AND VISUAL

- 8.2.4. Following the review of the additional land it anticipated that during the construction period landscape effects would not be materially different to those reported within **Chapter 7: Landscape and Visual** of the ES [APP-028].
- 8.2.5. The assessment of visual effects has identified that whilst the additional land would be physically larger in area, in near distance views the effects are already identified as being significant and the findings would not be changed.
- 8.2.6. In broader views the combination of distance, the presence of the A1, ECML and previously assessed site compounds would reduce the impact and the findings of the landscape and visual assessment would remain unchanged. The proposed mitigation bund to the western boundary would screen activity and materials stored within the main area of the additional land. The potential impacts are not anticipated to increase the anticipated magnitude of

impact. As such the findings in **Chapter 7: Landscape and Visual** of the ES [APP-028] remain valid.

BIODIVERSITY

- 8.2.7. The proposed use of the additional land, outlined in **Chapter 5, Biodiversity** of this ES Addendum, would result in no change to the significance of effects of the assessment of Biodiversity in **Chapter 8: Biodiversity** of the ES [APP-029].
- 8.2.8. An extended Phase 1 habitat survey and wintering bird validation surveys were completed to inform the assessment of impacts and effects of the additional land. Breeding bird, wintering bird and bat surveys are yet to be completed. The extended Phase 1 habitat survey identified a hedgerow priority habitat, as well as suitable habitats for bats, breeding birds and wintering birds within the additional land.
- 8.2.9. Temporary adverse impacts were identified on Lamesley Meadows LWS, bats, priority habitat and wintering birds. Impacts on Lamesley Meadows LWS and bats would result from disturbance. Acoustic design measures would be employed and ensure the significance of the effect would remain **neutral** (not significant). For wintering birds, impacts result from direct habitat loss. Due to the small proportional loss of suitable habitat, the significance of effect would remain **neutral** (not significant). A section of the hedgerow priority habitat would be removed during construction, however the hedgerow lost will be reinstated following the construction phase. The significance of the effect would remain **moderate** (significant).

POPULATION AND HUMAN HEALTH

- 8.2.10. No likely significant effects have been identified for private and community land take as a result of the use of the additional land during construction and the likely significant effects on private and community land take during construction would therefore remain the same as those assessed in **Chapter 12: Population and Human Health, paragraph 12.10.35** the ES [APP-033].

COMBINED ASSESSMENT

- 8.2.11. The additional land, outlined in **Chapter 2, The Scheme** of this ES Addendum, would result in no change to the conclusions of Chapter 15: Cumulative and Combined Assessment of the ES [APP-036]. As a result, the overall significance of effects reported within Chapter 15: Cumulative and Combined Assessment of the ES [APP-036] would remain not significant.

CONCLUSIONS

- 8.2.12. The use of the additional land would result in a **moderate** effect (significant) during construction on the setting of Lamesley Conservation Area; this effect would be temporary and would be mitigated when the additional land is returned to pasture.
- 8.2.13. There would be no change to the landscape and visual, biodiversity and population and health effects during construction compared to those assessed and reported in the ES.

9. ABBREVIATIONS

Acronym	Definition
CA	Conservation Area
CEnv	Chartered Environmentalist
CEMP	Construction Environmental Management Plan
CiFA	Chartered Institute for Archaeologists
CMRA	Coal Mining Risk Assessment
CMLI	Chartered Member for Landscape Institute
DCO	Development Consent Order
DMRB	Design Manual for Roads and Bridges
ECML	East Coast Main Line
EIA	Environmental Impact Assessment
ES	Environmental Statement
ExA	Examining Authority
HER	Historic Environment Records
HGV	Heavy Goods Vehicle
HPI	Habitats of Principle Importance
IEMA	Institute of Environmental Management and Assessment
LBAP	Local Biodiversity Action Plan
LWS	Local Wildlife Site
LVIA	Landscape Visual Impact Assessment
NERC	Natural Environment and Rural Committees
NTS	Non-Technical Summary
OS	Ordinance Survey
PEA	Preliminary Ecological Appraisal

SNCI	Site of Nature Conservation Importance
WSI	Written Scheme of Investigation
ZVI	Zone of Visual Influence

10. REFERENCES

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Ref 5.2 Gilbert G, Gibbons DW and Evans J (1998) Bird Monitoring Methods: A Manual of Techniques for Key UK Species. RSPB, London

Ref 5.3 Collins J. (ed.) (2016). Bat Surveys for Professional Ecologists, Good Practice Guidelines (3rd Edition). The Bat Conservation Trust, London.

Ref 5.4 Bat Conservation Trust: Noctule Trends for Great Britain -

http://www.bats.org.uk/pages/noctule_bat.html, Bat Conservation Trust: Common Pipistrelle

Trends for Great Britain - http://www.bats.org.uk/pages/-common_pipistrelle-821.html and

Bat Conservation Trust: Soprano Pipistrelle Trends for Great Britain -

Appendix A

ADDITIONAL LAND: DESKTOP ASSESSMENT AND SCOPING REPORT

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APPENDICES

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B.1 Agricultural Land Classification (ALC) Survey

1. INTRODUCTION

1.1. PURPOSE OF THE REPORT

- 1.1.1. This Desktop Assessment and Scoping Report (this "Report") supports the Environmental Statement (ES) Addendum (ES Addendum) produced in relation to a request to amend an application for development consent.
- 1.1.2. An application for development consent, which included an ES, was submitted to the Secretary of State for Transport via the Planning Inspectorate (the "Inspectorate") on 14 August 2019 for the A1 Birtley to Coal House Scheme ("the Scheme"). A full description of the Scheme can be found at Chapter 2: The Scheme of the ES [APP-023]. The ES sets out the finding of the Environmental Impact Assessment (EIA) that was carried out for the Scheme.
- 1.1.3. The Application was accepted for Examination in September 2019.
- 1.1.4. Further design development has continued to be undertaken by Highways England ("the Applicant") and its advisers since the application for a Development Consent Order (DCO) was made in order to realise efficiencies and design benefits. This is particularly important in optimizing a scheme being delivered by the public sector in the public interest.
- 1.1.5. As is normal in relation to any engineering project, further design development has continued to be undertaken by the Applicant and its advisers since the application for DCO was made in order to realise efficiencies and design benefits. This is particularly important in optimizing a scheme being delivered by the public sector in the public interest.
- 1.1.6. The proposed amendment to the Application that this Additional Land: Desktop Assessment and Scoping Report relates to is as follows:
 - a. The inclusion of additional land within the application at junction 67 (Coal House) to be used for material stockpiling. This land currently sits outside the proposed Order Limits and it is proposed that powers of temporary occupation are extended to the land during construction of the Scheme. As **Chapter 2: The Scheme** of the ES [APP-023], the term Order Limits is referred to as the 'Scheme Footprint' throughout this Report.
- 1.1.7. In order to understand if there would be significant environmental effects as a result of the additional land a desktop assessment has been carried out. The purpose of the appraisal has been to consider whether the additional land would alter the conclusion of the EIA already undertaken. The outcome of the desktop assessment has then informed a scoping exercise to identify if further EIA, in accordance with the Infrastructure Planning (Environmental Impact Assessment (EIA)) Regulations 2017 (EIA Regulations), would be required. The outcome of the Additional Land: Desktop Assessment and Scoping Report is

detailed in **Sections 4-14** below. The outcome of the scoping exercise is summarised in **Table 15-1** of this Report.

1.2. APPROACH TO THE ASSESSMENT

- 1.2.1. This document is a scoping assessment and reviews existing design and construction information available at the time of writing. It should be noted that this assessment is not a duplication of the ES and should be read in conjunction with **Chapter 2: The Scheme** of the ES [**APP-023**]. The assessment has been carried out in line with the methodologies described in the ES, using the professional judgement of the competent experts detailed within the ES and within **Sections 4-14** (where they are different from the ES) of this Report.

1.3. ES ADDENDUM: ADDITIONAL LAND

- 1.3.1. Following completion of this Report, a full assessment of those topics that were “scoped-in” to the assessment has been carried out.
- 1.3.2. This Report therefore now forms an appendix to the ES Addendum (**Appendix A**) and information within the ES Addendum has not been repeated here. As such this Report should be read in conjunction with the ES Addendum.

2. THE SCHEME

- 2.1.1. For details regarding the Scheme, see **Section 2: The Scheme** of the additional land ES Addendum [EXA/D4/009].
- 2.1.2. Scheme drawings are presented in **Appendix E: Figures** of the additional land ES Addendum [EXA/D4/009].

3. CONSULTATION

- 3.1.1. Consultation has been carried out during the production of this Report where likely significant effects were identified or where it has been deemed appropriate to inform the scoping exercise. Where the impacts and residual significant effects were deemed to be comparable to those already assessed in the ES, no consultation has taken place.

Table 3-1 - Summary of Consultation by Topic

Topic	Date / Method of Contact	Consultee / Name of Consultee	Overview of Consultation
Cultural Heritage			
Cultural Heritage	24/01/2020 - Email	Clare Richardson – Gateshead Council	<p>Key topic Highlighting the changes to the Scheme Footprint to include the additional land requirements for the construction period.</p> <p>Key outcome It was noted that intrusive groundworks should remain outside of the conservation area in order to minimise potential impacts to extant ridge and furrow earthworks.</p>
Cultural Heritage	23/01/2020 - Telephone and email	Rachel Grahame – Tyne and Wear Archaeology Officer	<p>Key topic Highlighting the changes to the Scheme Footprint to include the additional land requirements for the construction period.</p> <p>Key outcome A programme of geophysical survey was agreed to understand the impacts to any previously unrecorded buried archaeology. In addition, topographical survey was agreed to record any extant earthworks related to the medieval village at Lamesley.</p>
Landscape and Visual			
Landscape and Visual	27/01/2020 – Telephone	Janet Charlton-Gateshead Council	<p>Key topic Feedback was provided on the design of the temporary bunds and potential additional land layout. Concerns were raised over issues of additional lighting and opportunities for temporary enhancements through seeding of bunds. The scope of the assessment to</p>

Topic	Date / Method of Contact	Consultee / Name of Consultee	Overview of Consultation
			include construction only to reflect the temporary nature of the impacts. Key outcome The above was agreed with Gateshead Council.
Biodiversity			
Biodiversity	28/02/2020	Peter Shield – Gateshead Council	Key topics Highlighting the changes to the Scheme Footprint to include the additional land for the construction period. Discussion involved scoping of survey requirements. Key outcome To be confirmed
Biodiversity	28/02/2020	Andrew Whitehead – Natural England	Key topics Highlighting the changes to the Scheme Footprint to include the additional land for the construction period. Discussion involved scoping of survey requirements. Key outcome To be confirmed
Biodiversity	03/03/2020	Annie Ivison – Natural England	Key topics Natural England have requested further information on the bat survey effort. Key outcome To be confirmed
Geology and Soils			
Geology and Soils	24/01/2020 - email	Coal Authority – Chris MacArthur	Key topics The presence of development high risk areas linked to coal outcrops within the additional land to be used as a temporary construction compound does not require further Coal Mining Risk Assessment (CMRA) due to temporary nature of the proposed development. Key outcome Confirmation that a CMRA is not required.
Material Resources			
No consultation required for the additional land assessment.			
Noise and Vibration			

Topic	Date / Method of Contact	Consultee / Name of Consultee	Overview of Consultation
No consultation required for the additional land assessment.			
Population and Human Health			
No consultation required for the additional land assessment.			
Road Drainage and the Water Environment			
No consultation required for the additional land assessment.			
Climate			
No consultation required for the additional land assessment.			
Cumulative and Combined			
No consultation required for the additional land assessment.			

4. AIR QUALITY

4.1. INTRODUCTION

- 4.1.1. This section considers the implications of the additional land on the findings of **Chapter 5: Air Quality** of the ES [APP-026] and the potential changes in significant effects that may arise from this change. It sets out the desktop assessment findings including potential impacts, their mitigation and any likely significant effects as a result of the use of the additional land associated with air quality. Those aspects that would be scoped in and out of further assessment are also detailed.

4.2. COMPETENT EXPERT EVIDENCE

- 4.2.1. The competent expert advice for the Air Quality Assessment has not changed as a result of this desktop assessment. The text within **Section 5.2** of **Chapter 5: Air Quality** of the ES [APP-026] remains unchanged and valid.

4.3. STUDY AREA

- 4.3.1. The Study Area considers all sensitive receptors within 200m of the additional land. As such the Study Area for the construction dust assessment in **Section 5.6** of **Chapter: 5 Air Quality** of the ES [APP-026] would be subject to a minor change, accounting for a 200m area around the additional compound. This area resulted in the inclusion of one additional property in the assessment of construction dust.

4.4. BASELINE

- 4.4.1. Baseline conditions described within **Chapter 5: Air Quality** of the ES [APP-026] have not changed as a result of the additional land. The text within **Section 5.7** of **Chapter 5: Air Quality** of the ES [APP-026] remains unchanged and valid.

4.5. DESKTOP ASSESSMENT

Table 4-1 Air Quality Desktop Assessment for the Additional Land details the outcome of the Additional Land: Desktop Assessment and Scoping Report.

Table 4-1 – Air Quality Desktop Assessment for the Additional Land: Desktop Assessment and Scoping Report

Aspect of Assessment	Potential Impacts	Construction / Operation	Potential Mitigation	Likely Significant Effects
<p>Dust and particulate matter from additional land for the construction compound</p>	<p>Nuisance dust and increased particulate matter (PM) concentrations at adjacent residential receptors, with the number of receptors potentially affected (i.e. within 200m of the Scheme Footprint) increased by one property (located on the corner of Lamesley Road and Smithy Lane) compared to the ES (Chapter 5: Air Quality, paragraph 5.8.2 of the ES [APP-026]); from 1,192 to 1,193 properties).</p>	<p>Construction</p>	<p>No additional mitigation is required over and above that identified in Chapter 5: Air Quality, section 5.9 of the ES [APP-026].</p>	<p>With the application of mitigation measures and good practice during construction, the effects would be the same as those reported in Chapter 5: Air Quality of the ES [APP-026] i.e. there would be no significant effects as a result of construction dust.</p>

Aspect of Assessment	Potential Impacts	Construction / Operation	Potential Mitigation	Likely Significant Effects
Emissions from construction traffic	Change in roadside pollutant concentrations on affected routes. However, there is no anticipated change in construction traffic to and from the construction compound and therefore no significant change in roadside air quality.	Construction	No additional mitigation is required over and above that identified in Chapter 5: Air Quality of the ES [APP-026].	The effects would be the same as those reported in Chapter 5: Air Quality of the ES [APP-026] i.e. that there would be no significant air quality effects as a result of construction traffic.
Operational Impact Assessment	None – there are no changes to the traffic flow with the Scheme updates.	Operation	None Required	None

4.6. SCOPING

- 4.6.1. No significant effects relating to the additional land are anticipated and, as such there would no requirement for additional site-specific measures was identified. The further assessment of direct impacts arising from construction and operation activities and emissions from construction and operation traffic is therefore **scoped out** of this assessment.

4.7. ASSUMPTION AND LIMITATIONS

- 4.7.1. This Additional Land: Desktop Assessment and Scoping Report is based on the information provided by the main contractor in January 2020.

5. CULTURAL HERITAGE

5.1. INTRODUCTION

5.1.1. This section considers the implications of the additional land on the findings of **Chapter 6: Cultural Heritage** of the ES [APP-027] and the potential changes in significant effects that may arise from this change. It sets out the desktop assessment findings including potential impacts and mitigation and any likely significant effects as a result of the use of the additional land associated with cultural heritage. Those aspects that would be scoped in and out of further assessment are also detailed.

5.2. COMPETENT EXPERT EVIDENCE

5.2.1. As detailed in **Table 5-1**, the professionals contributing to the production of this chapter have sufficient expertise to ensure the completeness and quality of this assessment.

Table 5-1 – Cultural Heritage Professional Competence

Name	Role	Qualifications and Professional Membership	Experience
Elizabeth Murray	Author	<ul style="list-style-type: none"> - BA (Hons) Archaeology Associate of the Chartered Institute for Archaeologists (ACiFA) 	Five years of relevant EIA experience. Relevant project examples include: <ul style="list-style-type: none"> - Heritage specialist on M3 Junction 9 - Heritage specialist on A30 Carland Cross to Chiverton - Heritage specialist on M271 Redbridge Roundabout
Sally Hales	Reviewer	<ul style="list-style-type: none"> - BA (Hons) Archaeology, MA Archaeology - Member of the Chartered Institute for Archaeologists (MCiFA) 	25 years professional archaeology experience. Relevant project examples include: <ul style="list-style-type: none"> - Lead for the A5 WTC in NI which included managing the heritage assessment and EIA chapter input, implementation and management of archaeological fieldwork in accordance with the specifications - Expert witness at Public Enquiry - Heritage lead and technical reviewer for A1 Alnwick to

Name	Role	Qualifications and Professional Membership	Experience
			Ellingham and Morpeth to Felton schemes

5.3. STUDY AREA

- 5.3.1. The Study Areas within **Section 6.6 of Chapter 6: Cultural Heritage** of the ES [APP-027] of 500m and 1km were based on professional opinion as outlined in the guidance presented in HA208/07. They were agreed with both Historic England and the Gateshead Council Conservation Officer and were confirmed to be appropriate following a site walkover undertaken in February 2018. The distances reflect the proximity of the Scheme to the existing highway and the relatively low-lying nature of the Scheme within the landscape. Given the contiguous nature of the additional land to the current Scheme Footprint, and the limited nature of the works, the study area has not been expanded beyond that used in **Section 6.6 of Chapter 6: Cultural Heritage** of the ES [APP-027].

5.4. BASELINE

- 5.4.1. Full baseline conditions can be found in the Appendix 6.1: Heritage Constraints Plan – Designates Sites of the ES [APP-118].
- 5.4.2. The Historic England Desk Based Assessment (HEBDA) records ridge and furrow which is present within the additional land. It is possible that there are buried archaeological remains from the medieval period due to the presence of the adjacent medieval settlement, Lamesley. The buried archaeological remains are currently unconfirmed and were not recorded within **Appendix 6.2: Heritage Constraints Plan – Non-designated Sites** of the ES [APP-118].

5.5. DESKTOP ASSESSMENT

5.5.1. Table 5-2 Cultural Heritage Desktop Assessment for the Additional Land details the outcome of the Additional Land: Desktop Assessment and Scoping Report

Table 5-2 – Cultural Heritage Desktop Assessment for the Additional Land: Desktop Assessment and Scoping Report

Aspect of Assessment	Potential Impacts	Construction / Operation	Potential Mitigation	Likely Significant Effects
Lamesley Conservation Area	<p>Temporary impacts to the setting of the Conservation Area. The additional land is located partially within the Conservation Area boundary.</p> <p>The construction of the compound within, and on the edge of, the Conservation Area and the use of the area for stockpiling would impact on the current rural nature that creates an important element of the setting. Views out over the rural fringe of the village would be interrupted by the presence of earth stockpiles up to 4.5m in height.</p>	Construction (temporary)	Reinstatement of the additional land, to pasture, following the completion of construction.	The use of the additional land for the stockpiling of soil would impact on the setting of Lamesley Conservation Area. The flat surrounding landscape would be altered by the creation of stockpiles up to 4.5m in height. Views out over the rural fringe, that notably separate it from the industrialised areas to the north, would be impacted by the stockpiles, although these impacts would be temporary and reversible. The asset is of medium value and the impact to the setting of the asset would be moderate and result in an effect that is moderate adverse (significant).
Lamesley Conservation Area	Permanent impacts caused by the potential loss of any remnant ridge and furrow earth works associated with the medieval village impacting on the setting of the Conservation Area.	Construction (permanent)	Topographical survey of the ridge and furrow prior to construction activities.	The loss of ridge and furrow associated with the medieval origins of the village would adversely impact on the setting of the asset. Although the fields can be reverted to pasture, the loss of the ridge and furrow would be permanent. The asset is of medium value and the impact to the setting of the asset would be minor and result in a slight adverse effect (not significant).
Site of Lamesley village (664)	Permanent impacts to the setting of the village through the potential loss of ridge and furrow and other earthworks associated with the medieval village at Lamesley	Construction (permanent)	<p>Topographical survey of the ridge and furrow prior to construction activities.</p> <p>Geophysical and intrusive survey, such as trial trenching, to understand the survival, extent and significance of any previously unrecorded buried archaeological remains relating to the village.</p>	<p>The loss of the ridge and furrow would impact on the setting of the medieval village. It would result in the direct loss of associated earthwork elements. There are however other areas of ridge and furrow that remain to the south, southeast and northwest of the village.</p> <p>The village is of medium value and the impact to the setting would be minor adverse. This would result in a slight adverse effect (not significant).</p>
Ridge and Furrow (4929)	Direct physical impact due to the removal of extant areas of ridge and furrow associated with the former medieval village at Lamesley.	Construction (permanent)	Where feasible any ground disturbance to areas of extant remnant ridge and furrow earthworks would be avoided Topographical survey of ridge and furrow should be undertaken where impacts are unavoidable Geophysical survey on additional land	Loss of ridge and furrow and earthworks dating to the medieval period. The asset is of low value and the impact would be major adverse and there would be a permanent effect of moderate adverse significance (significant).

Aspect of Assessment	Potential Impacts	Construction / Operation	Potential Mitigation	Likely Significant Effects
			<p>take given the potential for buried archaeology relating to the medieval period. Further intrusive investigation dependent on the results of the geophysical survey.</p>	
<p>Previously unrecorded buried archaeology</p>	<p>Direct physical impacts to potential buried archaeology</p>	<p>Construction (permanent)</p>	<p>Geophysical survey would be required to investigate the potential for buried remains. The results of this would inform any further programme of investigation and subsequently feed into a programme of mitigation devised in consultation with the Tyne and Wear Planning Archaeologist.</p>	<p>There is the potential for permanent effects of slight to very large adverse significance depending on the value/sensitivity of the archaeology.</p>

5.6. SCOPING

- 5.6.1. Lamesley CA, site of Lamesley Village, Ridge and Furrow and previously unrecorded buried archaeology have been **scoped in** for the construction phase of the Scheme.
- 5.6.2. Potential impacts on cultural heritage assets during operation have been **scoped out** of this assessment as there will be no further ground disturbance and thus no additional impacts on buried heritage assets. The stockpile and construction works are temporary, and the field would revert back to its pre-existing condition. Consequently, there would be no impacts on the setting of nearby designated heritage assets.

5.7. ASSUMPTION AND LIMITATIONS

- 5.7.1. The assessments presented herein have been based on impacts to only those assets noted in the original Tyne and Wear Historic Environment Record (HER) material sourced for the HEDBA that accompanies **Chapter 6: Cultural Heritage** of the ES [APP-118]. For the full assessment HER data will be collected for the ES Addendum.
- 5.7.2. The data provided by the HER is not a record of all surviving heritage assets but a record of the discovery of a wide range of archaeological and historical components of the historic environment. There is a potential for the presence of further, unrecorded, heritage assets to be present within the ES Addendum.

6. LANDSCAPE AND VISUAL

6.1. INTRODUCTION

6.1.1. This section considers the implications of the additional land for the construction compound on the findings of **Chapter 7: Landscape and Visual** of the ES [APP-028] and the potential changes in significant effects that may arise from this change. It sets out the desktop assessment findings including potential impacts and mitigation and any likely significant effects as a result of the use of the additional land associated with landscape and visual. Those aspects that would be scoped in and out of further assessment are also detailed.

6.2. COMPETENT EXPERT EVIDENCE

6.2.1. As detailed in **Table 6-1**, the professionals contributing to the production of this chapter have sufficient expertise to ensure the completeness and quality of this assessment.

Table 6-1 – Landscape and Visual Professional Competence

Name	Role	Qualifications and Professional Membership	Experience
Andrew Williams	Author	<ul style="list-style-type: none"> - BA(Hons) Landscape Architecture - Grad Dip (Landscape Architecture) - Chartered Membership of the Landscape Institute (CMLI) 	<ul style="list-style-type: none"> - 24 years' experience preparing landscape and visual impact assessments for numerous highways schemes. Relevant project examples include: - A9 Dualling Tomatin to Moy (statutory EIA) - Oxon Link Road (statutory EIA) - East Leeds Orbital Road (statutory EIA)
Chris Rance	Reviewer	<ul style="list-style-type: none"> - BSc (Hons) Natural Environmental Science with Landscape Studies - MA Conservation Policy - MA Landscape Management - Chartered Membership of the Landscape Institute (CMLI) 	<ul style="list-style-type: none"> - Over 30 years' experience of coordination and technical review of landscape and visual impact assessments. Relevant project examples include: - Great Western Mainline Electrification - HS2 Phase One (Warwickshire and Staffordshire length) - Great Yarmouth Third River Crossing

Name	Role	Qualifications and Professional Membership	Experience
			<ul style="list-style-type: none"> - HS2 Phase 2B (Crewe to Manchester length)

6.3. STUDY AREA

- 6.3.1. For landscape character the Study Area is the extent of the relevant local landscape character areas impacted by the Scheme, and typically this extends to a buffer of approximately 2km in either direction from the Scheme Footprint. The extension of the Scheme Footprint as a result of the additional land would extend the Scheme Footprint by approximately 185m to the south, however this would be contained entirely within the previously identified character areas and no extension to the Study Area is proposed over that identified within **Section 7.6 of Chapter 7: Landscape and Visual** of the ES [APP-028].
- 6.3.2. The study area for the assessment of visual effects [SC1] [WA2] [AN3] has been defined as the extent of the refined Zone of Visual Influence (ZVI) for the Scheme, existing landscape features limiting broader awareness beyond the refined ZVI, for example planting along Smithy Lane to the south, and the existing A1 corridor to the north. This is shown on **Figure 7.3 Zone of Visual Influence** of the ES [APP-056].

6.4. BASELINE

- 6.4.1. The additional land lies entirely within Local Landscape Character Area (LLCA) 1 – Team Valley, refer to **Section 7.7 of Chapter 7: Landscape and Visual** of the ES [APP-028] and **Figure 7.1: Landscape Character Study Area and Landscape Character Areas** of the ES [APP-054].
- 6.4.2. The additional land extends to the south of a previously identified temporary compound and to the south of the existing A1 and occupies a large field to the north-east of the village of Lamesley. As such the occupants of nearby residential property, community and commercial receptors currently have views of the existing field on the fringes of the village. Distant views from the western flanks of the valley to the north and west are possible from dispersed residential properties and Public Rights of Way (PRoW). The baseline for those visual receptors potentially impacted by the additional land (refer to **Table 6-2**) has previously been identified within **Appendix 7.1: Visual effects Schedule [APP-121]** of **Chapter 7: Landscape and Visual** of the ES [APP-028] and **Figure 7.4: Visual Effects Drawing** of the ES [APP-057].

6.5. DESKTOP ASSESSMENT

6.5.1. **Table 6-2** Landscape and Visual Desktop Assessment for the Additional Land details the outcome of the Additional Land: Desktop Assessment and Scoping Report.

Table 6-2 – Landscape and Visual Desktop Assessment for the Additional Land: Desktop Assessment and Scoping Report

Aspect of Assessment	Potential Impacts	Construction / Operation	Potential Mitigation	Likely Significant Effects
Landscape Character	Temporary direct impacts on perception of the low-lying landform that forms LLCA 1 – Team Valley, disrupted by a geographically more extensive area of temporary stockpiles, plant and surface water storage. Indirect impacts to adjacent character areas to the north would not arise due to the existing A1 corridor forming a physical and visual barrier, constraining the degree to which impacts would be perceived.	Construction period only, therefore temporary, assumes that the land would be restored to former use (grazing) upon completion, such that during the operational period the impacts would not remain.	Utilise soil stripping and temporary storage to form screen bunds to the perimeter of the site, particularly the western boundaries to reduce awareness from higher ground to the west.	Temporary effects would be greater during the construction period, due to a geographically larger area being impacted than currently proposed. The previously identified moderate adverse magnitude of impact would be unlikely to be substantially increased, and the effect would remain moderate adverse (significant).
Visual	To the west of the additional land for the construction compound R7, P3, H1 – Views of temporary construction compounds would be broader and geographically more extensive, incorporating the majority of the foreground of the view.	Construction period only, therefore temporary, assumes that the land would be restored to former use (grazing) upon completion, such that during the operational period the impacts would not remain.	Utilise soil stripping and temporary storage to form a screen bund to the western perimeter of the site, to reduce awareness of associated visual clutter from viewpoints to the west.	R7 - Large adverse effects (significant) previously identified are likely to remain. P3 – Large adverse effects (significant) previously identified are likely to remain; the eastern tie in with Lamesley Road would result in a negligible modification in the view experienced to the south-east. H1 - Moderate adverse effects (significant) previously identified are likely to remain.
Visual	To the south of the additional land for the construction compound R8, H2 – Views of temporary construction compounds would be broader and geographically more extensive, incorporating the majority of the foreground of the view.	Construction period only, therefore temporary, assumes that the land would be restored to former use (grazing) upon completion, such that during the operational period the impacts would not remain.	Utilise soil stripping and temporary storage to form a screen bund to the southern perimeter of the site, to reduce awareness of associated visual clutter from viewpoints to the south.	R8 – Large adverse effects (significant) previously identified are likely to remain. H2 - Moderate adverse effects (significant) previously identified are likely to remain.
Visual	Within elevated views to the west, the broader views experienced by R5, R41, O2, P6 and P7 would experience a slightly increased awareness of the construction compound to the south of the Allerdene Bridge as a result of the more extensive construction compound area, however these would occur within the broad views of construction activity occurring elsewhere within the A1 corridor.	Construction period only, therefore temporary, assumes that the land would be restored to former use (grazing) upon completion, such that during the operational period the impacts would not remain.	Utilise soil stripping and temporary storage to form screen bunds to the perimeter of the site, particularly western boundaries to reduce awareness from higher ground to the west.	The slight adverse (not significant) effects during construction and identified for these visual receptors are not anticipated to be substantially modified as a result of the additional land.

6.6. SCOPING

- 6.6.1. Given the proximity of the additional land to the settlement of Lamesley, including residential properties and PRoWs there is the potential for impacts to occur on the perception of local landscape character and on the views experienced by occupants of residential, community and commercial receptors, and users of local PRoWs.
- 6.6.2. Given the intended use of the land as a construction compound, the likelihood is that the resulting effect would be temporary in nature, and an assessment of the operation has therefore been scoped out. As a result, the potential effects would be limited to the construction phase and would include daytime activity only, night time effects have been scoped out. As a result, the topic of landscape and visual has been **scoped in**. The scope would include landscape character and visual effects during construction and would include daytime effects.

6.7. ASSUMPTION AND LIMITATIONS

- 6.7.1. The following assumptions have been made in undertaking the assessment:
- a. The additional land would be restored to its former use (as grazing) following the construction phase, with no permanent changes to the landscape.
 - b. The layout of the compound would incorporate perimeter bunds formed from temporary top soil storage to provide partial visual screening, particularly to the western and southern boundaries, and that these would be seeded to reduce erosion and offer an acceptable appearance.

7. BIODIVERSITY

7.1. INTRODUCTION

7.1.1. This section considers the implications of the additional land for the construction compound on the findings of **Chapter 8: Biodiversity** of the ES [APP-029] and the potential changes in significant effects that may arise from this change. It sets out the desktop assessment findings including potential impacts and mitigation and any likely significant effects as a result of the use of the additional land associated with biodiversity. Those aspects that would be scoped in and out of further assessment are also detailed.

7.2. COMPETENT EXPERT EVIDENCE

7.2.1. As detailed in **Table 7-1**, the professionals contributing to the production of this chapter have sufficient expertise to ensure the completeness and quality of this Additional Land: Desktop Assessment and Scoping Report.

Table 7-1– Biodiversity Professional Competence

Name	Role	Qualifications and Professional Membership	Experience
Jack Fenwick	Author	<ul style="list-style-type: none"> - Bachelor of Science (Honours) - Full Member of the Chartered Institute of Ecology and Environmental Management (MCIEEM) 	Principal Ecologist with over 7 years' experience in ecological consultancy and impact assessment. Relevant project experience includes: <ul style="list-style-type: none"> - Lead Ecologist for the A1 in Northumberland: Morpeth to Felton scheme Ecological coordinator for Elwick Road, Hartlepool; residential scheme - Ecological coordinator for 45 mw biomass development, Middlesbrough - Author for Habitats Regulations Assessment (HRA) screening for Elwick Road and 45 mw biomass development
Andy Bascombe	Reviewer	<ul style="list-style-type: none"> - BSc (Hons) - MSc - PhD - Member of the Chartered Institute 	Technical Director with 28 years' experience in ecological consultancy <ul style="list-style-type: none"> - Ecological Technical Reviewer for the A1 Morpeth

Name	Role	Qualifications and Professional Membership	Experience
		<ul style="list-style-type: none"> of Ecology & Environmental Management (MCIEEM) - Member of Chartered Institute Water and Environmental Management - Chartered Scientist - Chartered Environmentalist 	<ul style="list-style-type: none"> to Feltham and A1 Alnwick to Ellingham schemes. - Ecology Manager for Lake Lothing, Lowestoft: Suffolk County Council. Responsible for management of ecological surveys and support services to a new bridge and road scheme, including Habitats Regulations Assessment of this Nationally Significant Infrastructure Project, planning and design advice, and attendance at DCO hearing. - Ecology Manager for Cambridgeshire Guided Busway, Cambridgeshire County Council, UK. Responsible for delivery of all ecological services from conceptual design through to post-construction monitoring for this £113M 27km public transport scheme, including EIA, proving evidence at Public Inquiry, and management of construction Ecological Clerk of Works.

7.3. STUDY AREA

- 7.3.1. the additional land increases the Scheme Footprint to the south by approximately 170 m. Given this small change, the desk study search distances (comprising the Study Area) in relation to statutory and non-statutory (including local, national and European) designated sites have not changed. The text within **Chapter 8: Biodiversity, Section 8.6.1** of the ES [APP-029] remains unchanged and valid.
- 7.3.2. With the exception of great crested newts *Triturus cristatus*, the study area in relation to habitats and species is land within and immediately adjacent to the additional land. For

great crested newts, the study area is the additional land plus 500m in accordance with the English Nature Great Crested Newt Mitigation Guidelines¹.

7.4. BASELINE

DESIGNATED SITES

- 7.4.1. Changes associated with the additional land assessment are summarised within **Table 7-2** below. All other baseline conditions described within **Chapter 8: Biodiversity, Section 8.7** of the ES [APP-029] and updated via the Local Wildlife Site Addendum (**Addendum 1** to **Volume 1** of the ES [AS-016]), remain unchanged and valid.
- 7.4.2. Local wildlife sites are of **County** importance, as they form a network of sites within Tyne and Wear that represent sites for animals and plants.

Table 7-2 - Summary of changes in distance measurements of Designated Sites from the Scheme Footprint

Site Name	Distance from Additional Land Study Area of the proposed amendments to the Scheme design	Designation Criteria
Lamesley Meadows LWS / Lamesley Pastures Site of Nature Conservation Importance (SNCI)	0.08km southwest (reduction in distance by approximately 190m)	A site containing permanent pasture, riverbank, ponds and reed beds. The LWS supports breeding waders including lapwing <i>Vanellus</i> , redshank <i>Tringa tetanus</i> and snipe <i>Gallinago</i> . Otter have also occasionally been recorded in the River Team. Other species recorded include dunnock <i>Prunella modularis</i> , song thrush <i>Turdus philomelos</i> and hedgehog <i>Erinaceus europaeus</i> .

HABITATS

- 7.4.3. Habitats were assessed following a review of aerial imagery and supplemented with existing site knowledge. The habitats within and immediately adjacent to the additional land are assessed as comprising improved grassland, hedgerow, scrub, standing water and scattered trees. The improved grassland appears comparable to the field to the immediate

¹ English Nature (2001). *Great Crested Newt Mitigation Guidelines*. English Nature, Peterborough.

north, as described in **Appendix 8.1: Statutory and Non-Statutory Sites** of the ES [APP-123].

7.4.4. Further survey is required to confirm the habitats present.

SPECIES

7.4.5. The assessment of habitats above has been used to inform the baseline for species.

7.4.6. From existing site knowledge, the standing water within the additional land is understood to be ephemeral. There were no additional waterbodies to the existing baseline identified from aerial imagery suitable to support great crested newts within the Study Area. The unnamed pond located approximately 230m to the south west referred to in in **Section 8.4.4** of this document was not considered suitable for great crested newts.

7.4.7. Habitats within and bordering the additional land are suitable to support:

- a. Breeding and wintering birds (improved grassland and hedgerow);
- b. Badger (hedgerow and scrub for setts creation); and
- c. Bats (trees for roosting and hedgerow and scrub for foraging).

7.4.8. The additional land may support Invasive Non-Native Species (INNS).

7.4.9. The presence/likely absence of the above notable species/species groups would be confirmed following further survey.

7.4.10. In the absence of further survey, baseline conditions for species described within **Chapter 8: Biodiversity, Section 8.7** of the ES [APP-029] remain unchanged.

7.5. DESKTOP ASSESSMENT

7.5.1. The assessment has been completed using data collected in 2018 to inform the ES (**Chapter 8: Biodiversity [APP-029]**). Desktop data collected for **Chapter 8: Biodiversity [APP-029]** of the ES covered the additional land.

7.5.2. Ecological features for which further survey is required to determine potential impacts and likely significant effects are included but their assessment has been based on existing knowledge from the ES **Chapter 8: Biodiversity [APP-029]** of the ecological features on adjacent land. This would be updated following completion of further survey work.

Table 7-3 - Biodiversity Desktop Assessment for the Additional Land: Desktop Assessment and Scoping Report

Aspect of Assessment	Potential Impacts	Construction / Operation	Potential Mitigation	Likely Significant Effects
Lamesley Meadows LWS / Lamesley Pastures Site of Nature Conservation Importance (SNCI)	The additional land reduces the distance between works and the existing Scheme Footprint to approximately 78m. This reduction in distance increases the risk of disturbance of key species (e.g. by noise and visual) during construction phase and degradation of the site from airborne pollution (including dust) during the construction phase.	Construction	No additional mitigation is anticipated to be required over and above that identified in Chapter 8: Biodiversity of the ES [APP-029].	It is assumed that there would be an increased level of disturbance within Lamesley Meadows LWS and a resultant degradation of the habitats due to airborne pollution during construction however this is subject to further assessment. Due to the decreased distance between the LWS / SNCI and the Scheme Footprint during the construction phase, the effect would be likely to increase to slight adverse (not significant) compared to the effect identified without the additional land.
Habitats	The temporary loss of an additional area of grassland during the construction period.	Construction	Reinstatement of habitat post-construction would be required in accordance with existing standards during construction as detailed within the existing mitigation.	The moderate adverse effects (significant) during construction are not anticipated to be substantially modified as a result of the additional land.
Wintering and Breeding Birds	The loss of the additional land during construction further reduces the area of land available for the wintering and breeding bird populations within the wider area. This loss increases from 3ha to 8.5ha (assumed area ahead of habitat assessment). This increases the magnitude of the effect of direct habitat loss during the construction phase. The existing effect of loss (mortality and injury) during the construction phase remains unchanged, as does the effect of disturbance (noise, visual and light) and habitat degradation (fragmentation/other alteration) during the construction phase.	Construction	The mitigation identified in Chapter 8: Biodiversity of the ES [APP-029] would be implemented. Additionally, reinstatement of habitat to the pre-existing condition would be required post-construction.	Due to the loss of additional land during construction the effect would be likely to increase to slight adverse (not significant) compared to a neutral effect identified without the additional land. This assessment assumes that the new area of land is used by the same population of wintering birds and would be subject to confirmation through surveys.
Bats (foraging)	Loss of the hedgerow (approximately 150 m in length) within the additional land would result in the loss of foraging / commuting habitat for bats. However, as the hedgerow is only connected to linear habitat features at its southern end and is separated from the linear woodland to the east by at least 40 m, fragmentation is not anticipated.	Construction	The mitigation identified in Chapter 8: Biodiversity of the ES [APP-029] would be implemented. Additionally, reinstatement of habitat to the pre-existing condition would be required post-construction.	As the hedgerow is not considered of optimal foraging habitat for bats, effects are considered to be neutral (not significant).
Bats (roosting)	Further surveys are required to confirm presence/likely absence of roosting bats.	Construction	Potential mitigation to be confirmed following surveys.	Likely significant effects to be confirmed following surveys.
Badgers	Further surveys are required to confirm presence/likely absence of badger on the additional land.	Construction	Potential mitigation to be confirmed following surveys.	Likely significant effects to be confirmed following surveys.

7.6. SCOPING

7.6.1. The following aspects have been **scoped in** to the assessment:

- a. Lamesley Meadows LWS / Lamesley Pastures SNCI
- b. Habitats
- c. Badger
- d. Roosting and foraging bats
- e. Wintering birds
- f. Breeding birds

7.6.2. The following ecological features are proposed to be **scoped out** from further assessment as the desk study assessment did not identify habitats within or immediately adjacent to the additional land suitable to support the species/species groups or contribute to supporting an assemblage greater than that already assessed. As such, the baseline conditions described within **Section 8.7 of Chapter 8: Biodiversity** of the ES [APP-029] for these ecological features remain unchanged and valid.

- a. Fish
- b. Invertebrates
- c. Brown hare
- d. Hedgehog
- e. Great crested newt
- f. Otter
- g. Water vole
- h. Red squirrel
- i. Reptiles

7.6.3. An extended Phase 1 habitat survey will be undertaken to inform the survey effort required. Based on professional judgment and surveys completed on adjacent land as reported in **Chapter 8: Biodiversity** of the ES [APP-029], wintering and breeding bird survey have been recommended and will be undertaken.

7.7. ASSUMPTION AND LIMITATIONS

7.7.1. The assessment for habitats and species is based on baseline conditions collected to inform the ES, as detailed in **Section 8.7 of Chapter 8: Biodiversity** of the ES [APP-029], and a review of the additional land using aerial imagery. The impact assessment with regards to habitats and species will be confirmed following the completion of further surveys.

8. GEOLOGY AND SOILS

8.1. INTRODUCTION

8.1.1. This section considers the implications of the additional land for the construction compound on the findings of **Chapter 9: Geology and Soils** of the ES [APP-030] and the potential changes in significant effects that may arise from this change. It sets out the desktop and survey assessment findings including potential impacts and mitigation and any likely significant effects as a result of the use of the additional land associated with geology and soils. Those aspects that would be scoped in and out of further assessment are also detailed.

8.2. COMPETENT EXPERT EVIDENCE

8.2.1. As detailed in **Table 8-1**, the professionals contributing to the production of this chapter have sufficient expertise to ensure the completeness and quality of this additional land: Desktop Assessment and Scoping Report.

Table 8-1 – Geology and Soils Professional Competence

Name	Role	Qualifications and Professional Membership	Experience
Verity Curtis	Author	<ul style="list-style-type: none"> - MSc Environmental Protection - Member of the Institute of Environmental Sciences (IES) 	Environmental Consultant with 19 years' experience. Relevant project examples include: <ul style="list-style-type: none"> - Preparation of Geology and Soils input into the Scoping Report for the A630 Sheffield Parkway (2019). - Preparation of Geology and Soils ES chapter for the A1 in Northumberland: Alnwick to Ellingham (2019 – present). - Preparation of Geology and Soils baseline data and input into the ES chapter for A9 Dualling: Tomatin to Moy (2015 – 2017). - Preparation of Geology and Soils ES chapter for the A5 Western Transport Corridor (2012 – present).
Andrew McCusker	Reviewer	<ul style="list-style-type: none"> - Chartered Engineer (CEng) 	Technical Director with over 27 years' experience. Relevant projects examples include:

Name	Role	Qualifications and Professional Membership	Experience
		<ul style="list-style-type: none"> - Member of Institute of Chartered Engineers (MICE) - Chartered Environmentalist (CEnv) - Specialist in Land Condition - Suitably Qualified Person 	<ul style="list-style-type: none"> - Maltkin Village - Technical Reviewer for Ground conditions and Groundwater sections - Brent Cross/Cricklewood – Technical Reviewer for Soil and Groundwater sections - HS2 – Project Manager and technical review for scheme sections C251/252

8.3. STUDY AREA

- 8.3.1. The Study Area for the additional land incorporates the additional land plus a buffer of 250m. This is consistent with the approach taken within **Section 9.6 of Chapter 9: Geology and Soils** of the ES [APP-029]. In the absence of any specific DMRB related guidance relating to a study area for geology and soils receptors, guidance document ‘Guidance for the Safe Development of housing on land affected by contamination (R&D 66)’ has been used to identify the Study Area. It is considered that this is the only area that would be affected in terms of geology and soils based on the surrounding sensitive environmental receptors and migration potential associated with potential sources of contamination identified.

8.4. BASELINE

- 8.4.1. With regard to the additional land changes to the original baseline relate to hydrology, mining and agricultural land.
- 8.4.2. There are two further watercourses and one pond present within the Study Area associated with the additional land.
- 8.4.3. Strandy Burn is located approximately 210m to the west of the boundary of the additional land on the opposite bank of the River Team at approximately the point of entry to the River Team of any flows from the additional land, therefore none or minimal if any impacts can reasonably be expected to this watercourse. The Burn is not classified under the Water Framework Directive (WFD). The Burn flows eastwards and enters the River Team to the west of the additional land.

- 8.4.4. An unnamed pond is located approximately 230m to the south west of the additional land, this is upstream and on the opposite bank of the River Team, therefore, it can reasonably be expected that there is no hydraulic connectivity to the additional land.
- 8.4.5. Coltspool Burn is located approximately 240m to the south of the boundary of the additional land. The Burn is not classified under the WFD. The Burn flows in a north east direction and enters the River Team to the south west of the additional land, this is upstream and on the opposite bank of the River Team, therefore, it can reasonably be expected that there is no hydraulic connectivity to the additional land.
- 8.4.6. There are development high risk areas present within the additional land associated with the presence of coal outcrops. There are no mine entries or evidence of past or probable shallow coal mining.
- 8.4.7. The additional land is in agricultural use and has an Agricultural Land Classification (ALC) of Grade 3 (undifferentiated). An ALC survey (**Appendix B.1** of this assessment) has been undertaken to classify the land and in particular, to subdivide any Grade 3 land into subgrades 3a (good quality / best of most versatile (BMV) land) and 3b.
- 8.4.8. The ALC survey confirmed that a further 5.45ha of additional land study area was surveyed, of which 0.8ha was classified as Grade 3a (BMV) with the remaining 4.65ha classified as Grade 3b (medium quality).

8.5. DESKTOP ASSESSMENT

- 8.5.1. **Table 8-2** Geology and Soils Desktop Assessment for the Additional Land details the outcome of the Additional Land: Desktop Assessment and Scoping Report.

Table 8-2 – Geology and Soils Desktop Assessment for the Additional Land: Desktop Assessment and Scoping Report.

Aspect of Assessment	Potential Impacts	Construction / Operation	Potential Mitigation	Likely Significant Effects
Agricultural Soil	Reduction in soil quality	Construction, and subject to the implementation of restorative process operation	No additional mitigation is anticipated to be required over and above that identified in Chapter 9: Geology and Soils of the ES [APP-030].	Following the outcome of the additional ALC survey and due to the relatively small size of the impacted area, the direct, temporary and/or permanent short to long term effect on soil

Aspect of Assessment	Potential Impacts	Construction / Operation	Potential Mitigation	Likely Significant Effects
				quality of minor to negligible adverse significance (not significant) as previously identified in Chapter 9: Geology and Soils of the ES [APP-030] remain.
Controlled waters – surface watercourses	Undertaking earthworks in close vicinity to sensitive surface water courses could potentially impact surface water quality.	Construction	No additional mitigation is anticipated to be required over and above that identified in Chapter 9: Geology and Soils of the ES [APP-030].	The direct, temporary effect on controlled water receptors of minor to negligible significance (not significant) as previously stated in Chapter 9: Geology and Soils of the ES [APP-030] is likely to remain as none of the additional watercourses identified have an increased sensitivity.

8.6. SCOPING

- 8.6.1. No significant effects relating directly to construction works have been identified. Based on the outcome of the ALC survey of the additional land, there is no change to the geology and soils impacts reported in **Chapter 9: Geology and Soils** of the ES [APP-030]. No requirement for site-specific measures was identified and, as such, the further assessment of direct impacts arising from construction activities and emissions from construction traffic is scoped out of this Additional Land: Desktop Assessment and Scoping Report.

8.7. ASSUMPTION AND LIMITATIONS

- 8.7.1. The assessment of soil quality relies in part, on data provided by third party presented in **Appendix B.1 ALC Survey Report.**

9. MATERIAL RESOURCES

9.1. INTRODUCTION

- 9.1.1. This section considers the implications of the additional land for the construction compound on the findings of **Chapter 10: Material Resources** of the ES [APP-031] and the potential changes in significant effects that may arise from this change. It sets out the desktop assessment findings including potential impacts and mitigation and any likely significant effects as a result of the use of the additional land associated with material resources. Those aspects that would be scoped in and out of further assessment are also detailed.

9.2. COMPETENT EXPERT EVIDENCE

- 9.2.1. The competent expert advice for the Material Resources Assessment has not changed as a result of this Additional Land: Desktop Assessment and Scoping Report. The text within **Section 10.2** of **Chapter 10: Material Resources** of the ES [APP-031] remains unchanged and valid.

9.3. STUDY AREA

- 9.3.1. The primary Study Area comprises the footprint of the additional land. The secondary Study Area is as per **Section 10.6** of **Chapter 10: Material Resources** of the ES [APP-031], which extends to the availability of construction and recovered material resources within north-east England (Northumberland, Tyne & Wear, Durham and the Tees Valley) and the UK, and the capacity of waste management facilities in the north-east of England.

9.4. BASELINE

- 9.4.1. Baseline conditions described within **Chapter 10: Material Resources** of the ES [APP-031] has not changed as a result of the additional land. The text within **Chapter 10: Material Resources, Section 10.7** of the ES [APP-031] remains unchanged and valid.
- 9.4.2. No changes to the baseline review of regional data for material resources availability or landfill capacity provided in **Chapter 10: Material Resources** of the ES [APP-031] are made by the additional land.
- 9.4.3. The additional land is agricultural and is used for horse grazing, as such it is expected to require negligible material resources and to not generate waste for disposal to landfill. As such, no-reassessment of the baseline is required.

9.5. DESKTOP ASSESSMENT

9.5.1. **Table 9-1** Materials Desktop Assessment for the Additional Land details the outcome of the Additional Land: Desktop Assessment and Scoping Report.

Table 9-1 – Materials Desktop Assessment for the Additional Land: Desktop Assessment and Scoping Report

Aspect of Assessment	Potential Impacts	Construction / Operation	Potential Mitigation	Likely Significant Effects
Consumption of material resources	Use of material resources to prepare the area for stockpiling e.g. aggregate for temporary tracks and timber for fencing.	Construction	No additional mitigation is anticipated to be required over and above that identified in Chapter 10: Material Resources of the ES [APP-031].	The additional land required for stockpiling would be temporary and only required during the construction period. It is possible that some material resources would be required to prepare the area for stockpiling (for example aggregate for temporary tracks, and timber for fencing). Whilst such details have not been provided to date, based on the methodology and assessment criteria set out in Chapter 10: Material Resources of the ES [APP-031] the consumption of materials for the additional land would not be expected to alter the original assessment findings and the slight adverse effects (not significant) identified previously are likely to remain.
Generation of waste	Generation and disposal of waste to landfill	Construction	No additional mitigation is anticipated to be required over and above that identified in Chapter 10: Material Resources of the ES [APP-031].	The additional land required for stockpiling would be temporary and only required during the construction period. It is possible that some waste would be generated as part of the site preparation works and during the operation of the construction compound however it is anticipated that negligible quantities of waste would be disposed of to landfill. Neither details of the forecast waste nor the expected management techniques have been provided, but on the basis that the Waste Hierarchy and other mitigation measures outlined in Chapter 10: Material Resources of the ES [APP-031] would be applied to minimise waste generation and disposal to landfill, the additional land is not considered to alter the findings of the original assessment and the neutral or slight adverse effects (not significant) identified previously are likely to remain.

- 9.5.2. The additional land is required for stockpiling during construction only. As such operation stage aspects are not considered.

9.6. SCOPING

- 9.6.1. No significant effects relating directly to construction works have been identified. No requirement for site-specific measures has been identified and, as such, the further assessment of direct impacts arising from consumption of material resources during construction, generation and disposal of waste to landfill during construction and operational impacts have been **scoped out** of this assessment.

9.7. ASSUMPTION AND LIMITATIONS

- 9.7.1. Assumptions and limitations specific to the additional land are set out below.
- a. The assessment is based on the information provided by the main contractor in relation to the design aspects of the additional land.
 - b. Information on the potential for incorporating recycled/secondary content in materials has not been provided but will be considered further during the detailed design and construction phase. The incorporation of any recycled/secondary content materials would further reduce the adverse impacts of material resource consumption however, the impact is not considered to materially affect the outcome of the main assessment.
 - c. It is assumed that the main contractor would apply best working practice in relation to material resources to maximise the recycled content of materials required for the additional land.
 - d. It is assumed that the main contractor would apply the Waste Hierarchy during decommissioning of the additional land, would make every effort to reduce waste generated and would recover and divert waste from landfill.

10. NOISE AND VIBRATION

10.1. INTRODUCTION

10.1.1. This section considers the implications of the additional land for the construction compound on the findings of **Chapter 11: Noise and Vibration** of the ES [APP-032] and the potential changes in significant effects that may arise from this change. It sets out the desktop assessment findings including potential impacts and mitigation and any likely significant effects as a result of the use of the additional land associated with noise and vibration. Those aspects that would be scoped in and out of further assessment are also detailed.

10.2. COMPETENT EXPERT EVIDENCE

10.2.1. As detailed in **Table 10-1**, the professionals contributing to the production of this chapter have sufficient expertise to ensure the completeness and quality of this Additional Land: Desktop Assessment and Scoping Report.

Table 10-1 - Acoustic Professional Competence

Name	Role	Qualifications and professional membership	Expertise
Toby Lewis – Technical Director (Specialist Consultants), WSP	DCO Lead	<ul style="list-style-type: none"> - MSc Applied Acoustics - MSc Environmental Health - MSc Pollution Control - LLM Environmental Law - PgD Acoustics and Noise Control - HNC Environmental Monitoring and Analysis - Chartered Environmental Health Practitioner - Chartered Scientist 	28 years' experience in acoustics. Relevant project experience includes: <ul style="list-style-type: none"> - Expert evidence provided to the Public Inquiry for East Leeds Orbital Road (Leeds City Council 2018 - 2019) - Expert evidence provided to the Public Inquiry for Grantham Southern Relief Road (Lincolnshire County Council 2018 - 2019) - Expert Evidence to the High Court in Judicial Review proceedings in relation to a planning permission (Cambridgeshire County Council 2018) - Preparation of Howbury Park Rail Freight Interchange ES Chapter

Name	Role	Qualifications and professional membership	Expertise
		<ul style="list-style-type: none"> - Fellow of the Institute of Acoustics (FIOA) - Member of the Chartered Institute of Environmental Health (MCIEH) - Member of the Institution of Environmental Sciences (IES) - Member of the Institute of Air Quality Management (IAQM) 	<p>and submissions to the Public Inquiry (Roxhill 2016 – 2018)</p>
<p>Jim Powlson - Associate Director (Specialist Consultants), WSP</p>	<p>Original ES Author, DCO support and reviewer</p>	<ul style="list-style-type: none"> - BSc (Hons) Audio Technology, First Class - Member of the Institute of Acoustics (MIOA) 	<p>Over 15 years' experience in Acoustic consultancy and EIA.</p> <ul style="list-style-type: none"> - Preparation of Clyde Waterfront and Renfrew Riverside DMRB detailed stage noise and vibration assessment work (Renfrewshire Council 2016 – 2017). - Preparation of Glasgow Airport Investment Area (GAIA) detailed stage noise and vibration assessment work (Renfrewshire Council 2016 – 2017). - South East Manchester Multi Modal Strategy – A6 to M60 link, DMRB Detail Stage noise and vibration assessment (Stockport Council, 2017-2018).

10.3. STUDY AREA

- 10.3.1. The Study Area for the construction phase noise, which is set out in **Figure 11.1: Construction Phase Study Areas and Assessment Locations** of the ES [APP-077], has been extended to incorporate the land to the north of Smithy Lane and to the east of Lamesley Road to include the additional land and the residential receptors to the west and north west.

10.4. BASELINE

- 10.4.1. The baseline noise survey reported in **Section 11.7 of Chapter 11: Noise and Vibration** of the ES [APP-032] included six measurement locations, two long-term and four short-term, which are shown in **Figure 11.3: Baseline Survey Noise Measurement Locations** of the ES [APP-079]. These baseline levels were used in the derivation of the significance criteria adopted for construction noise at assessment locations.
- 10.4.2. Assessment location 2 (AL2) is the closest assessment location to the residential receptors adjacent to the proposed additional land (approximately 160m north up Lamesley Road). Those receptors, which are to the west of the proposed compound, are further away from the A1 than any of the existing survey locations or assessment locations and for this reason, ambient noise levels may be lower than those applied for AL2.
- 10.4.3. As the noise criterion adopted for AL2 was category A (which is the lowest of the range of noise levels set out in BS 5228:2014+A1:2019, Annex E) during the day, its adoption at the new receptors ensures a worst-case assessment for this period. However, the night time criterion at AL2 was based on category B; so, if the actual noise levels at the now closest receptors were significantly lower than those obtained during the survey, the lower category A night-time criterion could be appropriate.
- 10.4.4. On a precautionary basis, therefore, it has been assumed that the ambient noise level at the receptors adjacent to the new compound is lower and construction noise exposure category is A has been adopted for the night-time.

10.5. DESKTOP ASSESSMENT

10.5.1. **Table 10-2** Noise and Vibration Desktop Assessment for the Additional Land details the outcome of the Additional Land: Desktop Assessment and Scoping Report.

Table 10-2 – Noise and Vibration Desktop Assessment for the Additional Land: Desktop Assessment and Scoping Report

Aspect of Assessment	Potential Impacts	Construction / Operation	Potential Mitigation	Likely Significant Effects
Noise from construction compound	Noise at adjacent residential receptors (Four dwellings to the north of St Andrews Church, Lamesley Road) during site mobilisation and de-mobilisation management and distribution of material stockpiles.	Construction	Given the proposed use of the additional land as a compound for stockpiling - the formation of earth bunding using some of the stockpile material on the perimeter closest to receptors will be a practical and effective mitigation measure. This bund should comprise the first stockpiled material to be deposited and the last to be used so that it is effective for the lifetime of the depot use. It should be as tall as possible and extend laterally to break the line of sight from the depot to the receptors. Additionally, siting of noise generating plant and equipment to minimise noise at sensitive receptors and consideration of working hours and practices would be considered in the site compound layout.	Exceedances of the adopted daytime criteria would be expected to arise from worst-case activities at the compound e.g. when works are undertaken at the boundaries closest to the receptors, during bund construction for example. However, with the proposed mitigation measures in place and given that such periods would be of limited duration resulting effects would be (not significant). During typical daytime operations at the compound, exceedances of the criteria would not be expected resulting in effect that would be not significant .
Vibration from construction compound	Vibration at adjacent residential receptors	Construction	No additional mitigation is anticipated to be required over and above that identified in Chapter 11: Noise and Vibration of the ES [APP-032].	Effects of no significance as previously determined are likely to remain (not significant).
Noise from construction traffic	Noise from additional HGV movements in front of the receptors to the west of the additional compound based on 56 HGV deliveries per day during peaks.	Construction	No additional mitigation is anticipated to be required over and above that identified in Chapter 11: Noise and Vibration of the ES [APP-032].	No significant effects were identified in Chapter 11: Noise and Vibration of the ES [APP-032] and an assessment of 112 additional Heavy Good Vehicle (HGV) movements (56 in and 56 out) results in a negligible change in road traffic noise levels at the receptors (not significant). These changes are negligible due to the relatively high existing flows on Lamesley Road.

10.6. SCOPING

- 10.6.1. No significant effects relating directly to the additional land are anticipated over and above those identified in **Section 11.10** of **Chapter 11: Noise and Vibration** of the ES [APP-032] and no additional site-specific measures are therefore deemed to be required. As such, the further assessment of impacts arising from noise and vibration from the additional land and its use as a compound and noise from construction traffic have been **scoped out** of this Additional Land: Desktop Assessment and Scoping Report.

10.7. ASSUMPTION AND LIMITATIONS

- 10.7.1. This desktop assessment is based on the information made available by the main contractor in January 2020.

11. POPULATION AND HUMAN HEALTH

11.1. INTRODUCTION

11.1.1. This section considers the implications of the additional land for the construction compound on the findings of **Chapter 12: Population and Human Health** of the ES [APP-033] and the potential changes in significant effects that may arise from this change. It sets out the desktop assessment findings including potential impacts and mitigation and any likely significant effects as a result of the use of the additional land associated with population and human health. Those aspects that would be scoped in and out of further assessment are also detailed.

11.2. COMPETENT EXPERT EVIDENCE

11.2.1. The competent expert evidence for the Population and Human Health Assessment has not changed for this Additional Land: Desktop Assessment and Scoping Report. The text within **Section 12.2** of **Chapter 12: Population and Human Health** of the ES [APP-033] remains unchanged and valid.

11.3. STUDY AREA

EFFECTS ON ALL TRAVELLERS

Motorised Travellers

11.3.1. In accordance with DMRB Volume 11, Section 3, Part 9 Vehicle Travellers, the Study Area for both views from the road and driver stress is the extent of the road network within the Scheme Footprint. In addition to the A1 carriageway, the Study Area includes the slip roads from the connected road network. This has not been altered from **Section 12.6** of **Chapter 12: Population and Human Health** of the ES [APP-033], as the extent road network within the Scheme Footprint has not increased due to the inclusion of the additional land.

Walking, Cycling and Horse-riding (WCH)

11.3.2. The assessment of effects on WCH considers the impact of the Scheme on local journeys made by people on the local (within 1km of the Scheme Footprint) PRow network. The assessment study area has been extended compared to **Section 12.6** of **Chapter 12: Population and Human Health** of the ES [APP-033] to include the additional land and a 1 km buffer around it. However, this area does not include any PRow that were not originally assessed.

Rail Travellers

11.3.3. The Study Area for the assessment of effects on rail travellers considers the impact of the Scheme on rail journeys between Newcastle Central Station and Chester-le-Street Station.

This Study Area has not altered from **Section 12.6 of Chapter 12: Population and Human Health** of the ES [APP-033].

EFFECTS ON COMMUNITIES

Community Severance

- 11.3.4. The Study Area for community severance includes those communities where residents would potentially be directly affected by the Scheme through changes in journey times and amenity when accessing facilities and services within their communities, as described in DMRB Volume 11, Section 3, Part 8. The study area for community severance has not altered from **Section 12.6 of Chapter 12: Population and Human Health** of the ES [APP-033].

Private and Community Land Take

- 11.3.5. The Study Area for identified private and community land take is within the Scheme Footprint. This is in accordance with DMRB Volume 11, Section 3, Part 6 which sets out that impacts should be assessed where land is lost in order for a scheme to be built. The study area for private and community land take is altered from **Section 12.6 of Chapter 12: Population and Human Health** of the ES [APP-033] and only includes the additional land.

EFFECTS ON PEOPLE

Local Economy

- 11.3.6. The Study Area for the local economy is the Gateshead Council administrative area, in the metropolitan county of Tyne and Wear. This study area has not altered from **Section 12.6 of Chapter 12: Population and Human Health** of the ES [APP-033].

Tourism and Recreation

- 11.3.7. The Study Area for the assessment of the Scheme on access to tourism and recreation is limited to those facilities within 1km of the Scheme, encompassing those facilities that are most likely to experience impacts during the construction and operational phases. The study area would be altered from **Section 12.6 of Chapter 12: Population and Human Health** of the ES [APP-033] to also include the additional land plus 1 km around it.

Human Health

- 11.3.8. The Study Area for human health includes those communities that are closest to the Scheme. This Study Area has not altered from **Section 12.6 of Chapter 12: Population and Human Health** of the ES [APP-033].

11.4. BASELINE

EFFECTS ON ALL TRAVELLERS

Motorised Travellers

- 11.4.1. There would be no changes to the baseline presented in **Section 12.7 of Chapter 12: Population and Human Health** of the ES [APP-033] as it is not anticipated that construction traffic would change as a result of the additional land.

Walking, Cycling and Horse-Riding

- 11.4.2. There would be no changes to the baseline presented in **Section 12.7 of Chapter 12: Population and Human Health** of the ES [APP-033].

Rail Travellers

- 11.4.3. There would be no changes to the baseline presented in **Section 12.7 of Chapter 12: Population and Human Health** of the ES [APP-033].

EFFECTS ON COMMUNITIES

Community Severance

- 11.4.4. The additional land take would bring construction activities closer to the residents of Lamesley as the additional land is close to private homes. In addition, it would bring construction activities closer to community facilities including St Andrews Church and Lamesley Childcare, which based in St Andrews Church Hall and provides private childcare during school holidays.

Private and Community Land Take

- 11.4.5. There would be some additional temporary land loss as a result of the additional land during the construction period, located to the north of Smithy Lane and to the east of Lamesley Road. The temporary land take is agricultural land currently used for horse grazing and which is near to residential properties and Lamesley Childcare based at St Andrews Church.

EFFECTS ON PEOPLE

Local Economy

- 11.4.6. There would be no changes to the baseline presented in **Section 12.7 of Chapter 12: Population and Human Health** of the ES [APP-033].

Tourism and Recreation

- 11.4.7. There would be no changes to the baseline presented in **Section 12.7 of Chapter 12: Population and Human Health** of the ES [APP-033].

Human Health

- 11.4.8. There would be no changes to the baseline presented in **Section 12.7 of Chapter 12: Population and Human Health** of the ES [APP-033].

11.5. DESKTOP ASSESSMENT

11.5.1. **Table 11-1** Population and Human Health Desktop Assessment for the Additional Land details the outcome of the Additional Land: Desktop Assessment and Scoping Report.

Table 11-1 – Population and Human Health Desktop Assessment for the Additional Land: Desktop Assessment and Scoping Report

Aspect of Assessment	Potential Impacts	Construction / Operation	Potential Mitigation	Likely Significant Effects
Motorised Travellers (Views from the Road)	Impacts would remain consistent with Section 12.8 of Chapter 12: Population and Human Health of the ES [APP-033].	Construction / Operation	No additional mitigation is anticipated to be required over and above that identified in Section 12.9 of Chapter 12: Population and Human Health of the ES [APP-033].	The slight adverse (not significant) effects and slight adverse (not significant) effects during construction and operation, respectively, are not anticipated to change as a result of the additional land take for the construction compound.
Motorised Travellers (Driver Stress)	Impacts would remain consistent with Section 12.8 of Chapter 12: Population and Human Health of the ES [APP-033].	Construction / Operation	No additional mitigation is anticipated to be required over and above that identified in Section 12.9 of Chapter 12: Population and Human Health of the ES [APP-033].	The major adverse (significant) and slight beneficial (not significant) effects during construction and operation, respectively, are not anticipated to change as a result of the additional land for the construction compound.
Rail Travellers	Impacts would remain consistent with Section 12.8 of Chapter 12: Population and Human Health of the ES [APP-033].	Construction / Operation	No additional mitigation is anticipated to be required over and above that identified in Section 12.9 of Chapter 12: Population and Human Health of the ES [APP-033].	The slight adverse (not significant) effect during construction, and neutral effect during operation, are not anticipated to change as a result of the additional land for the construction compound.
Walking, Cycling and Horse-Riding	Impacts would remain consistent with Section 12.8 of Chapter 12: Population and Human Health of the ES [APP-033].	Construction / Operation	No additional mitigation is anticipated to be required over and above that identified in the Section 12.9 of Chapter 12: Population and Human Health of the ES [APP-033].	The moderate adverse (significant) and moderate beneficial (significant) effects during construction and operation, respectively, are not anticipated to change as a result of the additional land for the construction compound.
Community Severance	Impacts would remain consistent with Section 12.8 of Chapter 12: Population and Human Health of the ES [APP-033].	Construction	No additional mitigation is anticipated to be required over and above that identified in Section 12.9 of Chapter 12: Population and Human Health of the ES [APP-033].	The moderate adverse (significant) effects during construction are not anticipated to change as a result of the additional land for the construction compound.
Private and Community Land take	Temporary loss of private land, during construction period including land take at Dunkirk Farm.	Construction	Early engagement with private landowners. Reinstatement of private land to its pre-existing condition on completion of works.	It is likely that there would be a temporary slight adverse effect (not significant) on private land during construction.
Economy	Impacts would remain consistent with Section 12.8 of Chapter 12: Population and Human Health of the ES [APP-033].	Construction / Operation	No additional mitigation is anticipated to be required over and above that identified in the Section 12.9 of Chapter 12: Population and Human Health of the ES [APP-033].	The slight beneficial (not significant) effect during construction and operation are not anticipated to be substantially modified as a result of the additional land for the site compound.
Tourism and Recreation	Impacts would remain consistent with Section 12.8 of Chapter 12: Population and Human Health of the ES [APP-033].	Construction / Operation	No additional mitigation is anticipated to be required over and above that identified in Section 12.9 of Chapter 12: Population and Human Health of the ES [APP-033].	The slight adverse (not significant) and slight beneficial (not significant) effects during construction and operation, respectively, are not anticipated to change as a result of the additional land.

Aspect of Assessment	Potential Impacts	Construction / Operation	Potential Mitigation	Likely Significant Effects
Human health	Construction related noise and dust at adjacent residential properties and Lamesley Childcare.	Construction	No additional mitigation is anticipated to be required over and above that identified in Section 12.9 of Chapter 12: Population and Human Health of the ES [APP-033]. Placement of bunds / barriers and siting of noise generating plant and equipment to reduce noise at sensitive receptors and consideration of working hours and practices would be considered in the site compound layout. Engagement with landowner, residents and the Lamesley Childcare business.	The moderate adverse (significant) effect during construction, and slight beneficial (not significant) effect during operation are not anticipated to change as a result of the additional land.

11.6. SCOPING

EFFECTS ON ALL TRAVELLERS

Motorised Travellers

- 11.6.1. **Scoped out** – It is not anticipated that the additional land take for the construction compound will result in changes to the assessment of Views from the Road or Driver Stress.

Walking, Cycling and Horse-riding

- 11.6.2. **Scoped out** – It is not anticipated that the additional land take for the construction compound will result in changes to the assessment of WCH.

Rail Travellers

- 11.6.3. **Scoped out** – It is not anticipated that the additional land take for the construction compound will result in changes to the assessment of Rail Travellers.

EFFECTS ON COMMUNITIES

Community Severance

- 11.6.4. **Scoped out** – It is not anticipated that the additional land take for the construction compound will result in changes to the assessment of Community severance.

Private and Community Land Take

- 11.6.5. **Scoped in** - There will be temporary land loss as a result of the additional land during the construction period for use as a construction compound. However, it is not anticipated that there would be any demolition of privately-owned assets.

EFFECTS ON PEOPLE

Local Economy

- 11.6.6. **Scoped out** – It is not anticipated that the additional land take for the construction compound will result in changes to the assessment of the Local Economy.

Tourism and Recreation

- 11.6.7. **Scoped out** - It is not anticipated that the additional land take for the construction compound will result in changes to the assessment of Tourism and recreation.

Human Health

- 11.6.8. **Scoped out** – Construction activities, including traffic and transport, timing of works, methods and programme remain unchanged to what was assumed within **Chapter 12: Population and Human Health** of the ES [APP-033].

11.6.9. Mitigation measures including seeding topsoil stockpiles with grass and good practice measures relating to Air quality and Noise presented in **Section 12.9** of **Chapter 12: Population and Human Health** of the ES [APP-033] would result in construction impacts comparable to those already identified and assessed.

11.6.10. Construction impacts to Human Health were originally assessed as resulting in a **temporary moderate** (significant) effect on the local population health. The proposed alterations would not change the significance of this impact.

11.7. ASSUMPTION AND LIMITATIONS

11.7.1. The following assumptions and limitations have been made for this assessment:

- a. Smithy Lane would not be used as a construction traffic access route;
- b. Construction traffic routes and access would be the same as previously assessed; and
- c. The impacts on Human Health has been concluded on the basis that the air quality and noise teams display no further adverse findings resulting from the additional land take.

12. ROAD DRAINAGE AND THE WATER ENVIRONMENT

12.1. INTRODUCTION

12.1.1. This section considers the implications of the additional land for the construction compound on the findings of **Chapter 13: Road Drainage and the Water Environment** of the ES [APP-034] and the potential changes in significant effects that may arise from this change. It sets out the desktop assessment findings including potential impacts and mitigation and any likely significant effects as a result of the use of the additional land associated with road drainage and the water environment. Those aspects that would be scoped in and out of further assessment are also detailed.

12.2. COMPETENT EXPERT EVIDENCE

12.2.1. The competent expert advice for the Road Drainage and the Water Environment Assessment has not changed as a result of this Additional Land: Desktop Assessment and Scoping Report. The text within **Section 13.2 of Chapter 13: Road Drainage and the Water Environment** of the ES [APP-034] remains unchanged and valid.

12.3. STUDY AREA

- 12.3.1. The Study Area for the Road Drainage and the Water Environment Assessment has not changed as a result of this Additional Land: Desktop Assessment and Scoping Report. The text within **Section 13.6 of Chapter 13: Road Drainage and the Water Environment** of the ES [APP-034] remains unchanged and valid.
- 12.3.2. The study area and 1 km buffer as shown within **Figure 13.3: Scheme Extents and Environmental Constraints** of the ES [APP-094] remain valid, with no changes required to the buffer to accommodate the additional land. This is because any changes to the 1km buffer would have minor impacts on the boundary of the Study Area and would only impact a small section of the River Team, which is upstream of the Scheme for which no hydraulic connectivity (in terms of Scheme impacts) or other impacts have been identified within **Section 13.6 of Chapter 13: Road Drainage and the Water Environment** of the ES [APP-034]. Additionally, no designated sites were identified in this area (**Figure 13.3: Scheme Extents and Environmental Constraints** of the ES [APP-094]).

12.4. BASELINE

12.4.1. Baseline conditions described within Section 13.7 of Chapter 13: Road Drainage and the Water Environment of the ES [APP-034] have not changed as a result of the additional land. The text within Chapter 13: Road Drainage and the Water Environment, Section 13.7 of the ES [APP-034] remains unchanged and valid. Within the additional land no significant water features have been identified, from a desktop exercise based upon aerial photography and Ordinance Survey (OS) mapping. However, the additional land does include a marshy area

adjacent to Lamesley Road. A site inspection has confirmed that this discharges to a culvert beneath the road. and then discharges across the ground surface to the River Team.

- 12.4.2. In the immediate area, in addition to the River Team and the Allerdene Burn there are two watercourses and one pond present.
- 12.4.3. Strandy Burn is located approximately 210m to the west of the boundary of the additional land on the opposite bank of the River Team at approximately the point of entry to the River Team of any flows from the additional land, therefore none or minimal if any impacts can reasonably be expected to this watercourse. The Burn is not classified under the WFD. The Burn flows eastwards and enters the River Team to the west of the additional land.
- 12.4.4. An unnamed pond is located approximately 230m to the south west of the additional land, this is upstream and on the opposite bank of the River Team, therefore, it can reasonably be expected that there is no hydraulic connectivity to the additional land.
- 12.4.5. Coltspool Burn is located approximately 240m to the south of the boundary of the additional land. The Burn is not classified under the WFD. The Burn flows in a north east direction and enters the River Team to the south west of the additional land, this is upstream and on the opposite bank of the River Team, therefore, it can reasonably be expected that there is no hydraulic connectivity to the additional land.

12.5. DESKTOP ASSESSMENT

12.5.1. **Table 12-1** Road Drainage and the Water Environment Desktop Assessment for the Additional Land details the outcome of the Additional Land: Desktop Assessment and Scoping Report.

Table 12-1 - Road Drainage and the Water Environment Desktop Assessment for the Additional Land: Desktop Assessment and Scoping Report

Aspect of Assessment	Potential Impacts	Construction / Operation	Potential Mitigation	Likely Significant Effects
Water Quality	Impacts on the water quality of receiving waterbodies (River Team or Allerdene Burn) from mobilised suspended solids or potentially spillage of fuels, oils and chemicals.	Construction	A Construction Environmental Management Plan (CEMP) and temporary surface water drainage strategy would be produced as detailed within Chapter 13: Road Drainage and the Water Environment of the ES [APP-034]. The mitigation would include storm water catchment system and suspended solids settlement pond, to ensure that sediments and contaminants are not discharged.	The likely significant effects would be the same as those in Chapter 13: Road Drainage and the Water Environment of the ES [APP-034] i.e. slight adverse (not significant) for the River Team and neutral (not significant) for all other watercourses.
Fluvial Flood Risk	Increase in flood risk associated with the River Team or Allerdene Burn.	Construction	A CEMP and temporary surface water drainage strategy would be produced as detailed within Chapter 13: Road Drainage and the Water Environment of the ES [APP-034]. The mitigation may include an additional storm water catchment system and suspended solids settlement pond.	The likely significant effects would be the same as those in Chapter 13: Road Drainage and the Water Environment of the ES [APP-034] i.e. slight adverse (not significant) for the River Team and neutral (not significant) for all other watercourses.
Increased groundwater flood risk	Additional waters discharged to ground which may lead to increased flood risk elsewhere.	Construction	No discharges to ground are included in the design, all waters would be discharged to the on-site watercourse, which discharges to the River Team.	The likely significant effects would be the same as those in Chapter 13: Road Drainage and the Water Environment of the ES [APP-034] i.e. neutral (not significant).
Decrease in groundwater quality.	Additional waters discharged to ground that contain contaminants which may lead to a decrease in water quality.	Construction	No discharges to ground are included in the design, all waters would be discharged to the on-site watercourse, which discharges to the River Team.	The likely significant effects would be the same as those in Chapter 13: Road Drainage and the Water Environment of the ES [APP-034] i.e. neutral (not significant).

12.6. SCOPING

12.6.1. No significant effects relating to the activities associated with the additional land have been identified in relation to road drainage and the water environment and, as such, the further assessment of impacts arising from water quality, fluvial flood risk, increased groundwater flood risk, and decrease in groundwater quality for construction is **scoped out** of this assessment. Mitigation measures in relation to the management of the attenuation pond within the additional land will be included in the Outline CEMP **[APP-174]**.

12.7. ASSUMPTION AND LIMITATIONS

12.7.1. The following assumption and limitation have been made in this assessment:

- a. The design of the soil stockpile drainage will be accordance Outline CEMP **[APP-174]** as assessed within **Chapter 13: Road Drainage and the Water Environment** of the ES **[APP-034]**.
- b. The surface water drainage strategy would be sized appropriately to collect and manage runoff (by restricting to greenfield rates) for all design events up to and including the 1 in 100-year event.

13. CLIMATE

13.1. INTRODUCTION

13.1.1. This section considers the implications of the additional land for the construction compound on the findings of **Chapter 14: Climate** of the ES [APP-035] and the potential changes in significant effects that may arise from this change. It sets out the desktop assessment findings including potential impacts and mitigation and any likely significant effects as a result of the use of the additional land associated with climate. Those aspects that would be scoped in and out of further assessment are also detailed.

13.2. COMPETENT EXPERT EVIDENCE

13.2.1. As detailed in **Table 13-1**, the professionals contributing to the production of this chapter have sufficient expertise to ensure the completeness and quality of Additional Land: Desktop Assessment and Scoping Report.

Table 13-1 - Climate Professional Competence

Name	Role	Qualifications and Professional Membership	Experience
Alice Berry	Author (Climate resilience)	<ul style="list-style-type: none"> - MSc - BSc (Hons.) - Graduate member of Institute of Environmental Management Assessment (GradIEMA) 	2 years' experience in environmental consultancy. Relevant project examples include: <ul style="list-style-type: none"> - Climate resilience co-author on West of Old Forest Road/Toutley Road ES - Climate resilience co-author on A27 Worthing-Lancing EAR - Climate resilience co-author on A27 Arundel EAR - Climate resilience co-author on M4 J15 EAR
Stephanie Hands	Reviewer (Climate resilience)	<ul style="list-style-type: none"> - MEnvSci - Practitioner member of Institute of Environmental Management Assessment (PIEMA) 	4 years' experience in environmental consultancy. Relevant project examples include: <ul style="list-style-type: none"> - Climate Lead on Shrewsbury North West Relief Road - Climate Resilience Specialist on Aquind Interconnector - Climate Lead A1 in Northumberland: Alnwick to Ellingham

Name	Role	Qualifications and Professional Membership	Experience
			<ul style="list-style-type: none"> - Climate Resilience Specialist A59 Kex Gill Diversion Scheme
James Peet	Reviewer (Greenhouse gases)	<ul style="list-style-type: none"> - MSc - BSc (Hons.) 	<p>Over 8 years' experience. Relevant project examples include:</p> <ul style="list-style-type: none"> - James has authored or technically reviewed approximately 30 Greenhouse Gas (GHG) assessments for EIA, including in the transport sector. - Coordinator and reviewer for A27 Arundel improvements EAR - Lead author for Northampton North Western Relief Road EIA. - Lead author for Kex Gill Improvements EIA.

13.3. STUDY AREA

EFFECTS OF THE SCHEME ON CLIMATE

13.3.1. The GHG assessment is not restricted by geographical area but instead includes any increase or decrease in emissions as a result of the Scheme. Therefore, the Study Area remains the same as **Section 14.6 of Chapter 14: Climate** of the ES [APP-035], where the primary Study Area is construction emissions within the Scheme Footprint. The tertiary Study Area is the emissions associated with the manufacturing of construction materials, transportation of materials and waste to and from the Scheme, and from the disposal of waste in the UK/globally. The secondary study area reported in **Section 14.6 of Chapter 14: Climate** of the ES [APP-035] relates to operation only and therefore does not apply to the additional land as it would only be required during construction of the Scheme.

VULNERABILITY OF THE SCHEME TO CLIMATE CHANGE

13.3.2. The United Kingdom Climate Projections (UKCP18) provides probabilistic projections for the whole of the UK at 25km² resolution. The additional land would be in the same 25km² grid square (437500.00, 562500.00) which also encompasses the Scheme. This would be supplemented by the 25km² UKCP09 grid square (ID: 1004) where data under UKCP18 is not available, as presented in **Chapter 14: Climate** of the ES [APP-035].

13.4. BASELINE

EFFECTS OF THE SCHEME ON CLIMATE

- 13.4.1. The additional land is not considered to change the baseline set out in **Section 14.7 of Chapter 14: Climate** of the ES [APP-035]. The additional land is currently used as agricultural land and the management of this land is expected to require limited additional material resources and to generate limited waste. Therefore, associated GHG emissions are negligible. In terms of user GHG emissions from road vehicles, given that the additional land is agricultural, the baseline emissions presented in **Section 14.7 of Chapter 14: Climate** of the ES [APP-035] would not change.
- 13.4.2. In the future baseline (without development), no change to the current baseline is expected.

VULNERABILITY OF THE SCHEME TO CLIMATE CHANGE

- 13.4.3. The additional land is not considered to make any changes to the baseline set out in **Section 14.7 of Chapter 14: Climate** of the ES [APP-035], as the baseline consists of details of local climate, past weather events and projected changes in climate using UKCP09 probabilistic projections.

13.5. DESKTOP ASSESSMENT

13.5.1. **Table 13-2** Climate Desktop Assessment for the Additional Land details the outcome of the Additional Land: Desktop Assessment and Scoping Report.

Table 13-2 - Climate Desktop Assessment for the Additional Land: Desktop Assessment and Scoping Report

Aspect of Assessment	Potential Impacts	Construction / Operation	Potential Mitigation	Likely Significant Effects
Effects of the Scheme on Climate				
Consumption of materials, generation of waste and their transportation.	Increases in GHG emissions associated with construction activities. Although it is anticipated that additional materials would be required and some waste generated in the preparation and reinstatement of the additional land e.g. hard surfacing temporary tracks, timber for fencing and their transportation, it is expected that this would be negligible. Therefore, GHG emissions associated with materials, waste and their transportation are expected to be negligible.	Construction	No additional mitigation is anticipated to be required over and above that identified in Chapter 14: Climate of the ES [APP-035].	The additional land required for stockpiling would be temporary and only required during the construction period. Design information from the main contractor indicates that materials and waste associated with the additional land would be considered negligible. Based on the methodology for assessment set out in the Chapter 14: Climate of the ES [APP-035], the negligible additional material resources and waste generated expected for the additional land would not alter the original assessment findings and the slight adverse effects (not significant) are expected to remain valid.
Vulnerability of the Scheme to climate change				
Vulnerability to climate change.	Potential impacts associated with climate and weather e.g. loss of vegetation leading to greater erosion risk due to drought/long periods of dry conditions, impacts to stored materials due to extreme temperatures and wetter weather.	Construction	No additional mitigation is anticipated to be required over and above that identified in Chapter 14: Climate of the ES [APP-035].	The additional land is an extension to the compound already assessed and would be required only temporarily during the construction of the Scheme for stockpiling only. Based on the methodology for assessment set out in the Chapter 14: Climate of the ES [APP-035], the additional land would not alter the original assessment findings. Therefore, the (not significant) effects on the vulnerability of the Scheme to climate change are expected to remain valid.

13.6. SCOPING

- 13.6.1. No significant effects relating directly to construction works have been identified. No requirement for site-specific measures have been identified and, as such, the further assessment of direct impacts arising from consumption of materials, generation of waste and their transportation during construction, vulnerability to climate change during construction and effects of the Scheme on climate and vulnerability of the Scheme to climate change during operation is **scoped out** of this assessment.

13.7. ASSUMPTION AND LIMITATIONS

- 13.7.1. Assumptions and limitations specific to the additional land are set out below.

EFFECTS OF THE SCHEME ON CLIMATE

- 13.7.2. In relation to effects of the Scheme on climate:

- a. At the time of writing **Chapter 14: Climate** of the ES [APP-035] and this Additional Land: Desktop Assessment and Scoping Report, there is no specific guidance or carbon emissions thresholds, which, if exceeded, are considered significant.
- b. The Additional Land: Desktop Assessment and Scoping Report is based on the information provided by the main contractor. Estimated quantities of additional materials required, and waste generated for the additional land were not available at the time of this Additional Land: Desktop Assessment and Scoping Report.

VULNERABILITY OF THE SCHEME TO CLIMATE CHANGE

- 13.7.3. In relation to vulnerability of the Scheme to climate change:

- a. The determination of resilience has been undertaken under the assumption that robust design standards will be adhered to where detailed information is unavailable.

14. COMBINED AND CUMULATIVE ASSESSMENT

14.1. INTRODUCTION

14.1.1. This section considers the implications of the additional land for the construction compound on the findings of **Chapter 15: Combined and Cumulative Assessment** of the ES [APP-036] and the potential changes in significant effects that may arise from this change. It sets out the desktop assessment findings including potential impacts and mitigation and any likely significant effects as a result of the use of the additional land associated with combined and cumulative assessment. Those aspects that would be scoped in and out of further assessment are also detailed.

14.2. COMPETENT EXPERT EVIDENCE

14.2.1. As detailed in **Table 14-1**, the professionals contributing to the production of this chapter have sufficient expertise to ensure the completeness and quality of this Additional Land: Desktop Assessment and Scoping Report.

Table 14-1 - Combined and Cumulative Professional Competence

Name	Role	Qualifications and Professional Membership	Experience
Jodie Rothwell	Author	<ul style="list-style-type: none"> - BSc (Hons) Oceanography - MSc Sustainable Environmental Management - IEMA Practitioner 	<p>Six years professional work experience in the field of EIA specialising in highways projects.</p> <ul style="list-style-type: none"> - The Combined and Cumulative Assessment for the Scheme at Option Selection Stage and for the EIA for A1 Birtley to Coal House Scheme. - Assisted on the Cumulative effects assessment Triton Knoll Offshore Wind Farm and Electrical Infrastructure National Significant Infrastructure Project (NSIP).
Nicola Ashworth	Reviewer	<ul style="list-style-type: none"> - BSc in Geography - MSc in Environmental Engineering 	<p>19 years' experience. Relevant project examples include:</p>

Name	Role	Qualifications and Professional Membership	Experience
		<ul style="list-style-type: none"> - Member of the Institute of Environmental Management and Assessment (MIEMA) - Chartered Environmentalist 	<ul style="list-style-type: none"> - Environmental assessment lead for the Scheme at Options Selection. - Environmental coordinator for A1 Coal House to Metro Centre Improvement scheme (Construction Preparation stage) Environmental Assessment Lead for A19 A1058 Coast Road Junction Improvement scheme (Preliminary Design stage to Construction, Commissioning & Handover).

14.3. STUDY AREA

COMBINED ASSESSMENT

14.3.1. The Study Areas used for the Combined Assessment are the same as those identified within each of the technical sections (**Chapters 4-13**) of this Additional Land Desktop Assessment and Scoping Report.

CUMULATIVE ASSESSMENT

14.3.2. The Study Area has not changed as a result of this Additional Land: Desktop Assessment and Scoping Report. The text within **paragraphs 15.6.2 – 15.6.6, Chapter 15: Combined and Cumulative Assessment** of the ES [APP-036] remains unchanged and valid.

14.4. BASELINE

14.4.1. The baseline for the combined effects is described in the technical chapters in this Additional Land Desktop Assessment and Scoping Report.

14.5. DESKTOP ASSESSMENT

14.5.1. A review of the technical desktop assessments reported in chapters 4 to 15 of this Additional land Desktop Assessment and Scoping Report has been undertaken in order to identify new or different environmental effects, or those that could combine to result in an

effect of greater significance. These combined effect interactions are detailed in **Table 14-2** below.

Table 14-2 – Matrix of combined effect interactions

Common Sensitive Receptors	Impacts	Air Quality	Cultural Heritage	Landscape and Visual	Biodiversity	Geology and Soils	Material Resources	Noise and Vibration	Population and Human Health	Road Drainage and Water	Combined Effect
Construction											
Residents / local users	Changes to surrounding landscape setting and views due to the use of the additional land take for the stockpiling of soil. This would be altered by the creation of topsoil bunds up to 4.5m in height in Lamesley CA.		X	X					X		Potential for temporary adverse/combined effects during construction. With the implementation of mitigation measures in the Outline CEMP [APP-174] for the Scheme, the combined effect would be of minor significance (not significant).

14.6. DESKTOP ASSESSMENT

14.6.1. **Table 14-3** Cumulative and Combined Effects Desktop Assessment for the Additional Land details the outcome of the Additional Land: Desktop Assessment and Scoping Report.

Table 14-3 Cumulative and Combined Effects Desktop Assessment for the Additional Land details the outcome of the Additional Land: Desktop Assessment and Scoping Report

Aspect of Assessment	Potential Impacts	Construction / Operation	Potential Mitigation	Likely Significant Effects
Assessment of Combined Effects	<p>Impacts from the additional land during the construction phase are anticipated to be comparable to those discussed in Chapter 15: Combined and Cumulative Assessment of the ES [APP-036] and would be temporary adverse.</p> <p>Potential temporary construction related noise and dust impacts at adjacent properties and Lamesley Childcare Centre are anticipated.</p> <p>Potential temporary impacts to surrounding landscape setting and views due to the creation of topsoil bunds up to 4.5m in height in Lamesley CA.</p> <p>Potential temporary impacts to heritage setting at Lamesley Conservation Area from the loss of the ridge and furrow earthworks.</p> <p>Potential for increased level of disturbance with Lamesley Meadows LWS and Lamesley Pastures SNCI as a result of degradation of the habitats due to airborne pollution during the construction phase.</p>	Construction	No additional mitigation is anticipated to be required over and above that identified in Chapter 15: Combined and Cumulative Assessment of the ES [APP-036].	The effect would be comparable to the effects identified for Chapter 15: Combined and Cumulative Assessment of the ES [APP-036] and would be minor adverse (not significant). However, further assessment will be completed.
Assessment of Cumulative Effects	<p>For the Assessment of Cumulative Effects, a full review of planning applications was undertaken in February 2020. Based on the assessment methodology detailed in Chapter 15: Cumulative and Combined Assessment of the ES [APP-036], and using the same study areas as defined previously, one additional development has been identified, as follows:</p> <ul style="list-style-type: none"> - ID 14: Planning Application Reference: 19/01484/FU4 - Construction of 56 dwelling houses and associated infrastructure. Located approximately 1.7km from the A1 Birtley to Coal House Scheme. <p>This planning application is detailed on Figure 1: Short List of Planning Applications, Appendix A.1 of this assessment; the short list of developments identified for the ES are detailed in Table 15-8 of the ES [APP-036].</p> <p>It is anticipated that the activities associated with the additional land would not give rise to additional traffic movements. Within the technical chapters above, the impacts associated with air quality, geology and soils, material resources, road drainage and the water environment and climate are not anticipated to be any worse than those identified for the ES and occur directly adjacent to the Scheme Footprint. The topics where there could be potential for additional impacts are cultural heritage, landscape and visual, biodiversity and population and health (private land</p>	Construction	No additional mitigation is anticipated to be required over and above that identified in Chapter 15: Combined and Cumulative Assessment of the ES [APP-036].	There would be no change to the effects identified for Chapter 15: Combined and Cumulative Assessment of the ES [APP-036] which would remain as minor adverse (not significant).

Aspect of Assessment	Potential Impacts	Construction / Operation	Potential Mitigation	Likely Significant Effects
	<p>take). It is not considered that these potential impacts would act together with the identified planning applications to create effects any worse than those identified in Table 15.9 of Chapter 15: Combined and Cumulative Assessment of the ES [APP-036]. Is it considered that this would equally apply to the new planning application identified above. As such an assessment of cumulative effects has been scoped out of further assessment.</p>			

14.7. SCOPING

- 14.7.1. No significant effects relating directly to construction works have been identified. No requirement for site-specific measures have been identified and, as such, the further assessment have been **scoped out** of this assessment.

14.8. ASSUMPTION AND LIMITATIONS

- 14.8.1. The following assumptions have been made in this Report:

- a. For the Cumulative Assessment, it should be noted that a full review of planning applications was undertaken for this Report in February 2020.

15. SUMMARY

Table 15-1 - Summary

Environmental Topic and Element	Scoped In / Out	Justification for Topics Scoped Out
Air Quality		
Impacts arising from construction activities	Out	The additional land introduces one extra receptor into the construction dust assessment area, increasing the receptor count from 1192 to 1193. This additional property will not change the conclusions as those reported in Chapter 5: Air Quality of the ES [APP-026].
Emissions from construction traffic	Out	No anticipated change to construction traffic, therefore impacts would be the same as those reported in Chapter 5: Air Quality of the ES [APP-026].
Cultural Heritage		
Historic Environment – Construction (temporary)	In	
Historic Environment – Construction (permanent)	In	
Historic Environment – Operational	Out	There would be no additional effects from the additional landtake during the operational phase of the scheme.
Landscape and Visual		
Landscape character Construction (daytime)	In	
Landscape character Operation	Out	Operation - The landscape would, following construction, be returned to its existing agricultural land use and permanent impacts on the perception of landscape character would not occur.
Landscape character Construction (night time)	Out	Construction – No night time working or lighting is proposed
Visual Amenity Construction(daytime)	In	
Visual Amenity Operation	Out	Operation - The landscape would, following construction, be returned to its existing agricultural land use and permanent impacts on views of the site would not occur.
Visual Amenity Construction (night time)	Out	Construction – No night time working or lighting is proposed
Biodiversity		

Environmental Topic and Element	Scoped In / Out	Justification for Topics Scoped Out
Lamesley Meadows LWS / Lamesley Pastures SNCI	In	
Other designated sites assessed in Chapter: 8 Biodiversity	Out	No impacts predicted due to the distance between the designated sites and the additional land.
Habitats	In	
Badger	Out	Scoped out based on the outcome of the Preliminary ecological appraisal.
Roosting bats	In	
Wintering birds	In	
Breeding birds	In	
Fish	Out	The Additional Land: Desktop Assessment and Scoping Report did not identify habitats within or immediately adjacent to the additional land suitable to support fish.
Invertebrates	Out	The Additional Land: Desktop Assessment and Scoping Report did not identify habitats within or immediately adjacent to the additional land suitable to contribute to supporting an assemblage greater than that already assessed.
Brown hare	Out	The Additional Land: Desktop Assessment and Scoping Report did not identify habitats within or immediately adjacent to the additional land suitable to contribute to supporting a population greater than that already assessed.
Hedgehog	Out	The Additional Land: Desktop Assessment and Scoping Report did not identify habitats within or immediately adjacent to the additional land suitable to contribute to supporting a population greater than that already assessed.
Great crested newt	Out	The Additional Land: Desktop Assessment and Scoping Report did not identify habitats within or immediately adjacent to the additional land suitable to support great crested newts.
Otter	Out	The Additional Land: Desktop Assessment and Scoping Report did not identify habitats within or immediately adjacent to the additional land suitable to support otter.
Water vole	Out	The Additional Land: Desktop Assessment and Scoping Report did not identify habitats within or immediately adjacent to the additional land suitable to support water vole.
Red squirrel	Out	The Additional Land: Desktop Assessment and Scoping Report did not identify habitats within or immediately adjacent to the additional land suitable to support red squirrel.
Reptile	Out	The Additional Land: Desktop Assessment and Scoping Report did not identify habitats within or immediately adjacent to the additional land suitable to support reptiles.
Geology and Soils		
Geology and Soils	Out	No anticipated change in impacts / effects from those previously stated in Chapter 9: Geology and Soils of the ES [APP-030] and no additional mitigation required.

Environmental Topic and Element	Scoped In / Out	Justification for Topics Scoped Out
Construction – direct construction impacts		
Material Resources		
Material Resources - Consumption of Material Resources during Construction	Out	Following a review of the proposed design of the additional land and based on the scale of the construction aspects (hard surfacing for temporary tracks and timber for fencing), the potential negligible addition to material quantities is not considered to alter the findings of Chapter 10: Material Resources of the ES [APP-031]. Therefore, no further assessment is required.
Material Resources - Generation and disposal of waste to landfill	Out	Based on the design information provided and the scale of the additional land, the potential for waste generation for disposal to landfill is considered negligible. As such, the findings of Chapter 10: Material Resources of the ES [APP-031] are not considered to change. Therefore, no further assessment is required.
Material Resources – Operation	Out	The additional land is required for stockpiling during construction only. As such operational stage aspects for material resources are not relevant to the assessment.
Noise and Vibration		
Noise from Compound	Out	The noise predicted from the use of the compound would be no worse than the assessed scenarios (working area 1, Scenarios A and B at AL 2) in Chapter 11: Noise and Vibration of the ES [APP-032].
Vibration from Compound	Out	The vibration anticipated from the use of the compound would be no worse than the assessed scenarios.
Construction Traffic Noise	Out	Construction road traffic noise expected to arise between the compound and the bridge embankment works would not result in any significant noise effects.
Population and Human Health		
Private Land Take	In	N/A
Human Health	Out	Construction activities (traffic and transport, timing of works, methods and programme) remain unchanged; Appropriate mitigation considered; Changes will not reduce the construction works already established significant impact on human health.
Road Drainage and the Water Environment		
Road Drainage and the Water Environment Construction -Water Quality	Out	A CEMP and construction drainage water strategy would be produced as detailed within Chapter 13: Road Drainage and the Water Environment of the ES [APP-034]. The mitigation would include storm water catchment system and suspended solids settlement pond. Therefore, no further impacts on the water environment are predicted.
Road Drainage and the Water Environment Fluvial Flood Risk	Out	A CEMP and construction drainage water strategy would be produced as detailed within Chapter 13: Road Drainage and the Water Environment the ES [APP-034]. The mitigation would include storm water catchment system and suspended solids settlement pond. Therefore, no further impacts on the water environment are predicted.
Road Drainage and the Water Environment Increased groundwater flood risk	Out	No discharges to ground are included in the additional land.

Environmental Topic and Element	Scoped In / Out	Justification for Topics Scoped Out
Road Drainage and the Water Environment Decrease in groundwater quality	Out	No discharges to ground are included in the additional land.
Climate		
Effects of the Scheme on Climate		
Consumption of materials, generation of waste and their transportation.	Out	Based on the design information provided and the scale of the additional land, the potential for negligible additional materials required and waste generated is not considered to alter the findings of Chapter 14: Climate of the ES [APP-035]. Therefore, no further assessment is required.
Vulnerability of the Scheme to Climate Change		
Vulnerability to climate change.	Out	Based on the additional land for stockpiling being temporary, only required during the construction period and that the compound is an extension to land already assessed, this change is not considered to alter the findings of Chapter 14: Climate of the ES [APP-035]. Therefore, no further assessment is required.
Both Effects of the Scheme on Climate and Vulnerability of the Scheme to climate change		
Effects of the Scheme on Climate and Vulnerability of the Scheme to Climate Change - Operation.	Out	The additional land is required for stockpiling during construction only. As such operational stage aspects for climate are relevant to the assessment.
Combined and Cumulative		
Combined Assessment	In	There will be no anticipated change in impacts or required mitigation from those previously stated in Chapter 15: Combined and Cumulative Assessment of the ES [APP-036] and would not result in any significant effects. However, further assessment will be completed in order to confirm this assertion.
Cumulative Assessment	Out	There will be no anticipated change in impacts or required mitigation from those previously stated in Chapter 15: Combined and Cumulative Assessment of the ES [APP-036] and would not result in any significant effects.

16. NEXT STEPS

- 16.1.1. As part of the ES Addendum full assessments have been completed for the environmental disciplines scoped into the assessment as described within this Report. This has involved the completion of surveys including ALC surveys, tree survey, ecology surveys including a preliminary ecological appraisal and wintering bird surveys as a minimum, and geophysical and topographic surveys.
- 16.1.2. A non-statutory targeted consultation was undertaken for 28 days starting on 17 March 2020 and ending on 14 April 2020. The targeted consultation was undertaken with the relevant persons identified in s42 (a) to (d) of the Planning Act 2008 and recommended by the Examining Authority (ExA) in its Rule 8 letter dated 28 January 2020.
- 16.1.3. The ES Addendum will be submitted at Deadline 4 (20 April 2020).

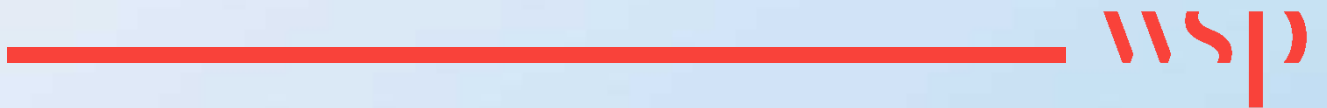
17. GLOSSARY

Acronym	Definition
ACiFA	Chartered Institute for Archaeologists
AL2	Assessment location 2
ALC	Agricultural Land Classification
AO	Archaeology Officer
BMV	Best and most versatile
CA	Conservation Area
CEMP	Construction Environmental Management Plan
CEng	Chartered Engineer
CEnv	Chartered Environmentalist
CMLI	Chartered Membership of the Landscape Institute
CMRA	Coal Mining Risk Assessment
DCO	Development Consent Order
DMRB	Design Manual for Roads and Bridges
ECML	East Coast Mainline
EIA	Environmental Impact Assessment
ERIC	Environmental Records Information Centre
ES	Environmental Statement
ExA	Examining Authority
FIOA	Fellow of the Institute of Acoustics
GAIA	Glasgow Airport Investment Area
GradIEMA	Graduate member of the Institute of Environmental Management Assessment
GHG	Greenhouse Gas
HEDBA	Historic Environment Desk-Based Assessment
HER	Historic Environment Record
HGV	Heavy Goods Vehicle
HRA	Habitats Regulations Assessment
IAQM	Institute of Air Quality Management
IEMA	Institute of Environmental Management Assessment
IES	Institute of Environmental Sciences
INNS	Invasive Non-Native Species

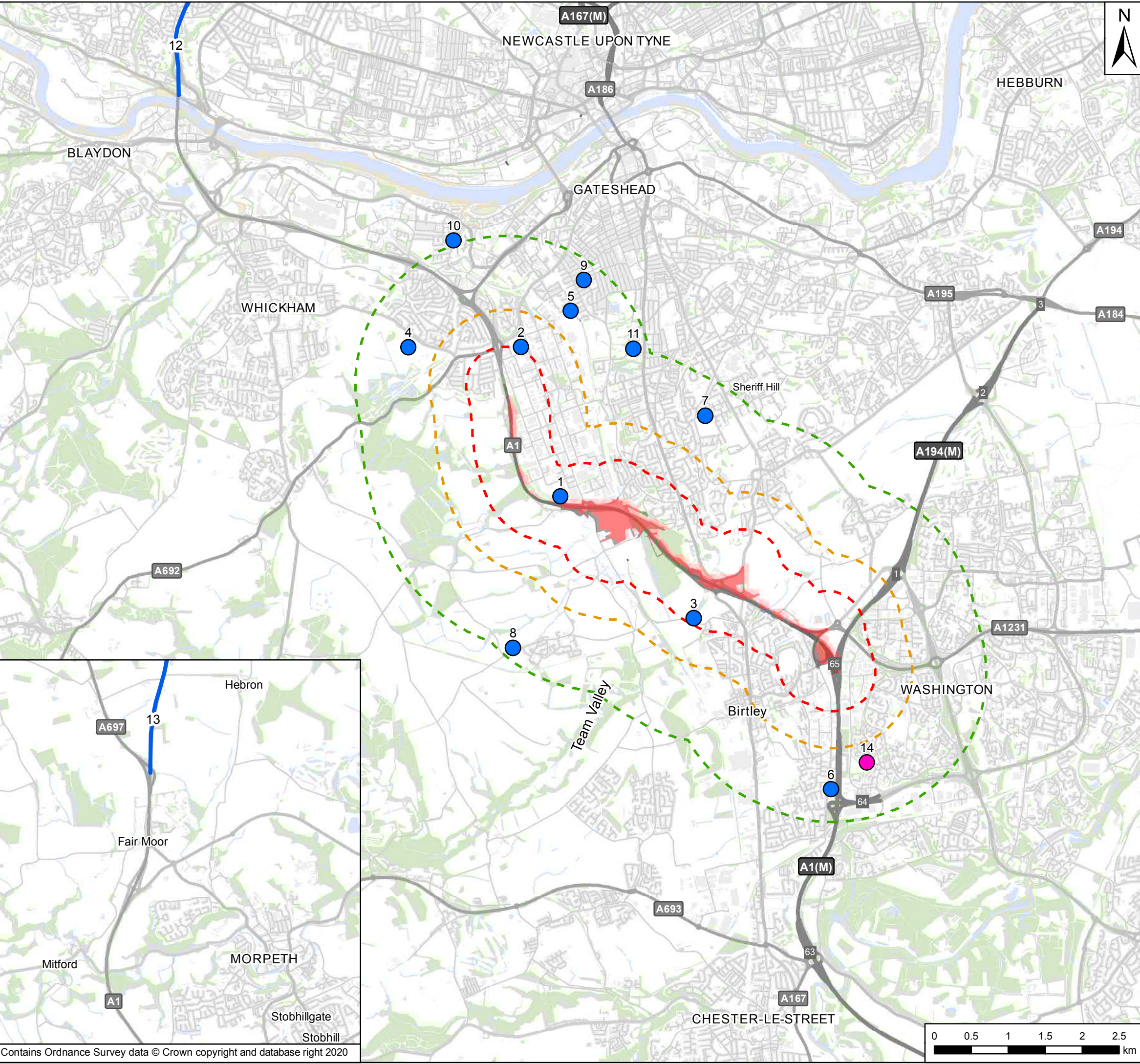
Acronym	Definition
LLCA	Local Landscape Character Area
LWS	Local Wildlife Site
MCIEH	Member of the Chartered Institute of Environmental Health
MCIfA	Member of Chartered Institute for Archaeologists
MCIEEM	Member of Chartered Institute of Ecology and Environmental Management
MICE	Member of Institute of Chartered Engineers
MIEMA	Member of the Institute of Environmental Management Assessment
MIOA	Member of the Institute of Acoustics
OS	Ordnance Survey
PIEMA	Practitioner member of the Institute of Environmental Management Assessment
PINS	Planning Inspectorate
PM	Particulate Matter
PRoW	Public Rights of Way
SNCI	Site of Nature Conservation Importance
UKCP09	United Kingdom Climate Projections 09
WCH	Walking, Cycling and Horse-riding
WFD	Water Framework Directive

Appendix A.1

FIGURES

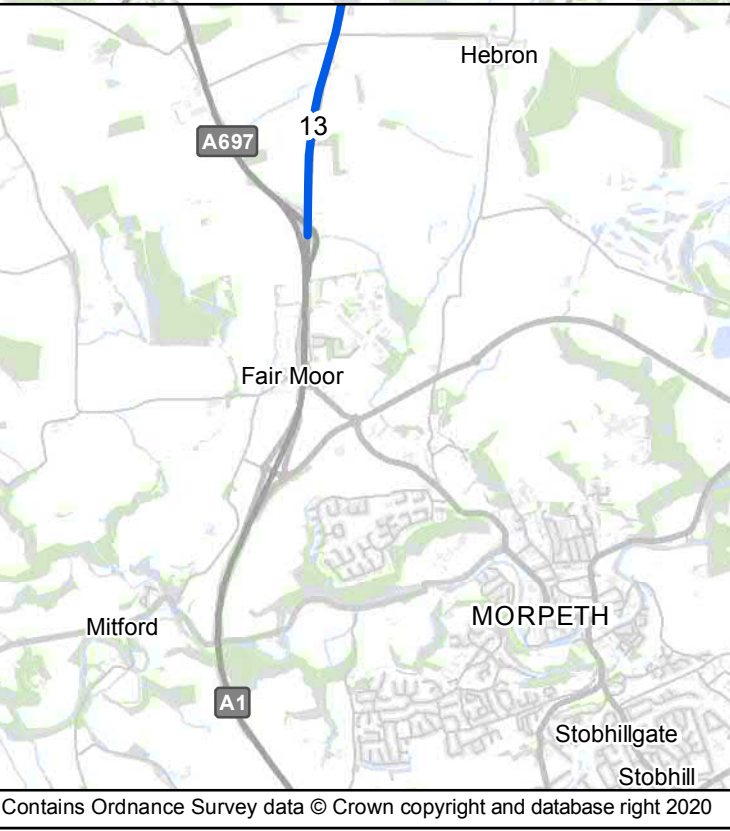


User Name: UKGDH001 Date Saved: 07/04/2020 14:01:53
 Document Path: \\uk.wsgroup.com\central\data\Projects\700419\A70041947 - A1BCH PCF Stage 3 and 4\03 Shared\EI EIA and flood risk\01 Model\GIS\MXD\Environmental Statement\Feb 2020 Issue\Scoping Reports\Figure 1 - Short List of Planning Applications Rev P01.mxd



Key

- Scheme Footprint
- 500m Study Area
- 1km Study Area
- 2km Study Area
- Cumulative Developments
- Cumulative Developments
- Additional Cumulative Developments



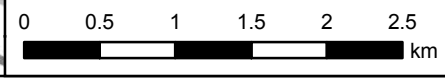
Rev	Date	Description	By	Chk'd	App'd
P02	Apr 2020	Second Issue	GH	JR	NJA
P01	Feb 2020	First Issue	GH	JR	NJA

PINS Reference Number: TR010031



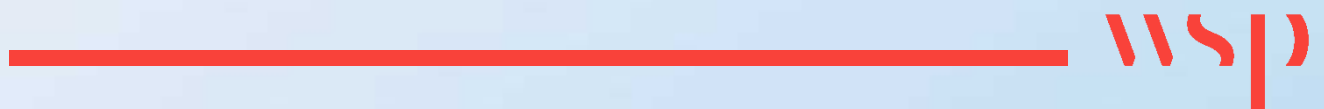
Client: highways england
 Project Title: A1 Birtley to Coal House Scheme
 Drawing Title: Figure 1 - Short List of Planning Applications

Scale	Drawn	Checked	Approved	Authorised		
1:50,000	GH	JR	KS	MR		
Original Size	Date	Date	Date	Date		
A3	Feb 2020	Feb 2020	Feb 2020	Apr 2020		
Drawing Number	Originator	Volume	Revision			
HE551462	WSP	6.2	P02			
B2CH		ID	Direction	Type	Role	Number
Section	Type	ID	Direction	Type	Role	Number



Appendix B.1

AGRICULTURAL LAND CLASSIFICATION (ALC) SURVEY





WSP



Agricultural Land Classification

A1 Birtley to Coalhouse Compound

April 2020



ADAS GENERAL NOTES

Project No.: WSP90001(4)/1010409

Title: Agricultural Land Classification – A1 Birtley to Coalhouse Compound

Client: WSP

Date: 14th April 2020

Office: ADAS Gleadthorpe, Meden Vale, Mansfield, Nottinghamshire. NG20 9PD

Status: Final

Author	Vic Gauld	Technical reviewer	Rosemary Peel
Date:	<u>8/4/2020</u>	Date:	<u>9/4/2020</u>

RSK ADAS Ltd (ADAS) has prepared this report for the sole use of the client, showing reasonable skill and care, for the intended purposes as stated in the agreement under which this work was completed. The report may not be relied upon by any other party without the express agreement of the client and ADAS. No other warranty, expressed or implied, is made as to the professional advice included in this report.

Where any data supplied by the client or from other sources have been used, it has been assumed that the information is correct. No responsibility can be accepted by ADAS for inaccuracies in the data supplied by any other party. The conclusions and recommendations in this report are based on the assumption that all relevant information has been supplied by those bodies from whom it was requested. No part of this report may be copied or duplicated without the express permission of ADAS and the party for whom it was prepared.

Where field investigations have been carried out, these have been restricted to a level of detail required to achieve the stated objectives of the work.

This work has been undertaken in accordance with the quality management system of RSK ADAS Ltd.

EXECUTIVE SUMMARY

The Agricultural Land Classification of two fields in Lamesley, near Newcastle on Tyne was assessed by ADAS in March 2020 for the compound area as part of the A1 Birtley to Coalhouse road improvement project. The fields lie south east of Junction 67 on the A1.

The land is very gently sloping to the west varying in altitude from 20m A.O.D in the east to 15m in the west. At the time of the survey the site supported permanent pasture grazed by horses.

The land is underlain by Pennine Middle Coal Measure deposits covered by Glaciolacustrine deposits.

The resulting soils in the large western field are heavy textured with evidence of waterlogging within the top 40 cm of the soil and as a consequence the land is of moderate quality (Grade 3b). In the small eastern field the soils are medium textured with only slight evidence of waterlogging, resulting in good quality (Grade 3a) land.

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Appendices

Appendix 1: Agricultural Land Classification Maps and Auger Boring Location Plans

Appendix 2: Soil Descriptions

Appendix 3: Laboratory Analysis

Appendix 4: Description of the Grades and Subgrades

1 INTRODUCTION

ADAS was instructed by WSP to undertake an Agricultural Land Classification (ALC) survey on land affected by the proposed compound area as part of road junction improvements along the proposed A1 Birtley to Coalhouse Improvement Scheme, near Newcastle on Tyne. Two fields at Lamesley, which lies south east of Junction 67 on the A1 were surveyed.

The land was classified using the system outlined in the Ministry of Agriculture, Fisheries and Food (MAFF, now Defra) publication: 'Agricultural Land Classification of England and Wales - Revised guidelines and criteria for grading the quality of agricultural land' (October 1988).

2 METHODOLOGY

2.1 Fieldwork

A desk study of soils and climatic information was undertaken using reference material held by ADAS, followed by detailed fieldwork to study soil and site limitations.

Fieldwork was undertaken with a hand held 50mm diameter "Dutch" auger and/or spade to a depth of up to 1m. In addition, soil pits were excavated to determine subsoil characteristics which could not be identified from the auger samples.

The location of 7 auger borings (numbered 1-7) and 2 soil pits were examined, to determine the quality of the agricultural land; the location of the auger borings and pits and the ALC grading of the land are shown on the plans at **Appendix 1**. A brief description of the soil pits and auger profiles are given in **Appendix 2**. The results of laboratory analysis for topsoil particle size distribution are shown at **Appendix 3**.

The site preparation and fieldwork were carried out on 3rd March 2020 when the soils were at field capacity.

2.2 The Agricultural Land Classification System

The ALC system provides a framework for classifying land according to the extent to which its physical or chemical characteristics impose long-term limitations on agricultural use. The limitations can operate in one or more of four principal ways.

They may affect:

- the range of crops which can be grown;
- the level of yield;
- the consistency of yield; and
- the cost of obtaining the crop.

The classification system gives considerable weight to flexibility of cropping, whether actual or potential; the ability of some land to produce consistently high yields of a somewhat narrower range of crops is also taken into account.

The principal physical factors influencing agricultural production are climate, site (including relief) and soil. By assessing these factors, it is possible to assign land into one of five land classification grades, Grade 1 land being the highest quality and Grade 5 the lowest quality land. Grade 3 is sub-divided into Grades 3a and 3b, to identify good quality agricultural land from moderate quality land (see **Appendix 4** for a description of the grades used in the ALC system). By considering site specific climate, site and soil factors the land can be classified into 1 of 5 agricultural grades or certain non-agricultural grades, the results of which are detailed in Sections 5.4 and 5.5.

3 GEOLOGY, SOILS AND PRESENT LAND USE

3.1 Geology

The geology map¹ shows the area to be underlain by a solid geology of the Pennine Middle Coal Measures Formation. This deposit is a sedimentary bedrock laid down in swamps, deltas and estuaries 310 – 318 million years ago in the Carboniferous Period. Pennine Middle Coal Measures Formation is comprised of Mudstone, Siltstone and Sandstone.

The solid geology is overlain by a superficial cover of Glaciolacustrine deposits, formed over 2 million years ago in the Quaternary Period.

3.2 Soils

The soils are mapped on the soil maps² of the area as mostly Foggerthorpe 1, with some Rivington Association in the east.

Rivington Association: These soils have developed mainly from sandstone with some shale. The Association typically consists of soils which are either coarse loamy over sandstone (Rivington and Withnall Series, accounting for 50% and 25% of the Association respectively) or fine loamy soils (Heaply Series, accounting for 15% of the association). The soils located on site were more typical of the Heapey association having a slowly permeable layer in the profile and they typically fell into Wetness Class (WC) 3. Wetness classes provide an indication of how wet a soil is, WC 1 is well drained and WC 5 is poorly drained.

Foggerthorpe 1 Association: These soils have developed in glaciolacustrine deposits formed in ice age lakes and deltas. Soils in this association typically include stoneless clay and silt soils on level ground. They are poorly drained and fall into WC 4.

3.3 Present Land Use

The land is comprised of two fields, separated by a hedge. The western field is far larger than the eastern field and they are both under permanent pasture and grazed by horses.

The site is bordered by Smithy Lane to the south, Lamesley Road to the west, further fields to the north and a railway line to the east.

¹ <http://www.bgs.ac.uk/data/mapViewers/>

² SSEW 1983 Soils of Northern England

3.4 Previous Agricultural Land Classification Surveys

The Provisional ALC maps show the site as an area of Grade 3 land. The Provisional maps only give an indication of land quality over larger areas and should not be relied on for site specific assessment of land quality. In addition, they do not classify land into Subgrades 3a and Subgrade 3b to differentiate between better quality (Grade 3a) and lower quality (Grade 3b) land.

The Magic website³ indicates that the northern half of the eastern field has been classified by Natural England as Grade 3a. The larger western field has a small area of Grade 3a land and a small area of Grade 3b land mapped in the north eastern corner of the field; this grading is mainly consistent with the finding of the ADAS survey described in this report.

4 RESULTS

The sections below illustrate the main considerations and limitations to the grading of the land.

4.1 Climate

The site climatic variables have been interpolated from grid point data surrounding locations along the route, as follows:

Table 1: Climatic Variables

Grid Reference	NZ25295811
Altitude (m)	15
Accumulated Temperature (day °C)	1347
Average Annual Rainfall (mm)	674
Overall Climatic Grade	1
Field Capacity Days	168
Moisture deficit (mm): Wheat	98
Moisture deficit (mm): Potatoes	86

The route lies in the lowlands of north east England and so has a cool moist climate. Accumulated Temperature (January–June), a measure of the relative warmth of the area, is 1347°C and the average annual rainfall is 674mm.

This combination of rainfall and temperature indicates that the area is cool and moist, so the soils need to be well drained to support good crop growth.

³ magic.defra.gov.uk/

4.2 Site Limitations

Slope: The land in the east lies at an altitude of around 20m, and the site is almost level to very slightly sloping, to 15 AOD in the west. Gradient is a neutral factor in the classification of the site because gradients are less than 7°; however the site has a ridge and furrow pattern in parts of the field and undulations and gullies across the site which give a micro relief limitation on the better quality soils.

Flooding: The majority of both sites is unaffected by flooding from rivers or sea⁴, however the River Team lies to the west of the site, and surface water flows towards the west towards it. Depressions across the site were under water at the time of survey.

4.3 Soil and Interactive Limitations

The limitations of soil wetness and soil drought are determined by the interaction between soil depth, wetness, structure and texture, all of which influence how easy the land is to work, and so they have an effect on land quality. On this site the soils are mainly imperfectly to poorly drained (WC 3 and WC 4); they are moderately well structured and permeable in the topsoil but the subsoil is similar or heavier textured and often poorly structured within 400mm and extending into the lower subsoil, they are gleyed within 400mm (WC 4). In the eastern field the soils are medium textured but over lie similar and heavier subsoils and so fall into WC 3. Drought is generally not an overriding limitation to land quality in this area.

The main factor affecting land quality in this area is:

- Depth to a slowly permeable layer coupled with soil texture, which affects the workability of the soils.

4.4 Land Quality

The land quality of the site is shown on the attached plan (**Appendix 1**).

Grade 1

No land has been placed in this grade.

Grade 2

No land has been placed in this grade.

Grade 3a

- This Grade has been mapped over 14.7% of the site to include the better drained soils which are limited by the presence of wet hollows. The soils have:
 - Organic medium clay loam topsoil over similar upper subsoils which become heavier with depth with clay below 580 mm. The soils are gleyed at 450 mm and are slowly permeable at 580 cm; they fall into WC 3.

⁴ <http://www.environment-agency.gov.uk/homeandleisure/37793.aspx>

- These medium textured topsoils over imperfectly drained subsoils are limited to Grade 3a due a micro relief limitation which creates wet hollows, making the land difficult to work. This land is capable of producing moderate to high yields of a narrow range of crops.

Grade 3b

- This Grade has been mapped over 85.3% of the route to include the heavy textured poorly drained soils which have:
 - Organic heavy clay loam and organic clay topsoil over similar or more clayey subsoils. The profiles are gleyed within 330mm and slowly permeable within 460mm, and so fall into WC 4.
 - This land is capable of producing moderate yields of a narrow range of crops.

Grade 4

No land has been placed in this grade.

Grade 5

No land has been placed in this grade.

Other land

No land has been placed in this grade.

4.5 Summary of Land Quality in the Survey Area

Table 2: Agricultural Land Classification Measurements

Grade	Area (ha)	% of Total Area
1	-	-
2	-	-
3a	0.80	14.7
3b	4.65	85.3
4	-	-
5	-	-
Other land	-	-
Total	5.45	100

5 CONCLUSION

- The Provisional ALC maps, produced in the 1970s, classified the land along the route as Grade 3 land. However, the provisional mapping exercise was not meant to give a detailed grading of small parcels of land and so the site has been classified again, using the current ALC guidelines.
- The detailed survey undertaken for this report has classified the land as Grade 3b in the large eastern field and Grade 3a land in the eastern field. Grade 3b land is not included in the 'Best and Most Versatile Land' category (Grade 1-3a) and so is afforded less protection from development under Government policy.
- A suitable soil handling strategy should be developed to help preserve land quality on the temporary land take areas and to make effective use of the soils from the areas of permanent land take. The strategy should help to preserve the soil and retain soil functions such as water and carbon storage.

APPENDIX 1 – AGRICULTURAL LAND CLASSIFICATION MAPS AND AUGER BORING LOCATION PLAN

See following page



AGRICULTURAL LAND CLASSIFICATION

- x 1-12 Auger Boring
- x p1 Pit Location
- Grade 1
- Grade 2
- Grade 3a
- Grade 3b
- Grade 4
- Grade 5
- Land predominantly in urban use.
- Other land primarily in non-agricultural use
- Not Surveyed
- Survey boundary

01.04.20	TF	RP	A	AGRICULTURAL LAND CLASSIFICATION
DATE	DRAWN	CHECKED	REVISED	ISSUE

A1 BIRTLEY to COALHOUSE Compound

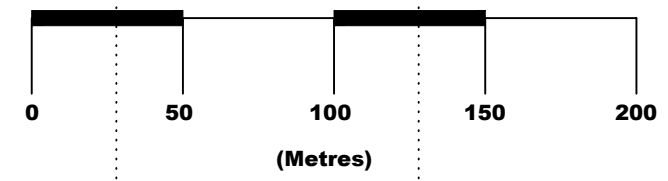
AGRICULTURAL LAND CLASSIFICATION

SCALE	1/2500	MASTER SIZE	A3
DRAWING NO.	WSP9001/1010409/ALC 01	ISSUE	A



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Scale = 1:2500 @ A3



APPENDIX 2 – SOIL SURVEY DETAILS

Keys common to all tables

Texture Key

S = sand
Z = silt
C = clay
L(y) = loam(y)

F = fine
M = medium
C = coarse
Pt(y) = peat(y)

Structure Key

(V)Wk = (very)weak
F = fine
SG = single grain
PI = platy

M = moderate
M = medium
GR = Granular
AB = angular blocky

S = strong
C = coarse
SAB = subangular blocky
PR = prismatic

Colour key

Br = brown
Rd = red
Ol = olive
Lt = light

Bl = black
Or = orange
Pk = pink

Yl = yellow
pl = pale
Gr = grey

Main Limitation

DR = Drought
GR = Gradient

WE = Wetness
MR = Microrelief

CL = Climate
TX = Texture

Land use

Wht = wheat

Bar = barley
Wc = winter cereals

Pp = permanent pasture

r&f = ridge and furrow
pot = potatoes

(W)osr = (winter) oil seed
rape
fal = fallow

Others abbreviations

ab = abundant
MB = moisture balance
occ = occasional/ly
sat = saturated
SPL = slowly permeable layer

cons = concretions
Mn = manganese
och = ochreous
sl org = slightly organic
na = not applicable

imp = impenetrable
mot = mottles
pok = pockets
rrm = rusty root mottles
OM = organic matter

PIT DESCRIPTIONS

Pit	Depth (mm)	Colour	Texture	Structure	Drainage/Porosity (0.5% pores)	Total Stone %
1	330	10YR 3/1 V Dk Br	MCL	M,M,SAB	-	-
	580	10YR 4/1 Dk Gr	MCL	M, M, SAB more M, C, SAB with depth; friable;	Och com porosity <0.5%	-
	1000+	10YR 6/2 Li Br Gr	C	M, C, SAB from PR;	Och com porosity <0.5%	-
Slightly Gleyed	Gleyed at: 330	SPL at: 580	Wetness class: 3	Wetness grade: 2	Comments: ponded water in depressions	
		MB wheat: 98 MB pot: 86	DR Grade: 2	Main limitation. MR causing WE		ALC grade 3a



Pit	Depth (mm)	Colour	Texture	Structure	Drainage/Porosity (0.5% pores)	Total Stone %
2	270	2.5YR 3/1 V Dk Gr	C	M,M,SAB	-	1 hard
	450	10YR 5/2 Gr Br	C	St, M, PR;	Och M porosity <0.5%	1 hard
	1200	10YR 5/1 Gr	C	St, C, PR;	Och M porosity <0.5%	
Slightly Gleyed	Gleyed at: 270	SPL at: 420	Wetness class: 4	Wetness grade: 4/3b		
		MB wheat: 98 MB pot: 86	DR Grade: 1	Main limitation. WE		ALC grade 3b





AUGER BORING DESCRIPTIONS

No / land use/ gradient	Bottom Depth of horizon	Texture	Colour	Gleyed / spl	% Stone >2cm /total	Wetness Class	Main Limitation	Grade
Whole site: Grazed permanent pasture on very gently sloping to level ground								
1	250	C	V Dk Gr	-	1			
	570	C	Li Br Gr	Och – many	1			
	1000	C	V Dk Gr	Och – ab	1	4	WE	3b/4
2	320	HCL	V Dk Br	-	-			
	450	C	Dk Gr	Och – many	-			
	1000	C	V Dk Gr + Dk Gr	Och – many	-	4	WE	3b
3	270	MCL	V Dk Gr Br	Rrm	Gritty			
	450	MCL	Yl Br	-	1			3b
	580	HCL	Li Br Gr	Och – com	1			
	1000	C	Li Br Gr + Dk Gr	Och – many	-	3	WE	3a
4	250	C	V Dk Gr Br	-	1			
	350	HCL/C	Br	Och – few	1			
	1000	C	Dk Gr	Och – many	-	4	WE	3b/4
On side of a wet gully								
5	240	HCL	V Dk Br	Rrm	-			
	530	C	Dk Gr	Och – many	-			
	1000	C	Gr	Och – many	-	4	WE	3b
6	330	HCL	V Dk Gr Br	Och – few (by 250)	1			
	520	HCL	Gr	Och – many	1			
	620	SCL	Gr Br	Och – ab	1			
	1000	C	Gr Br	Och – ab	-	3	WE	3b
7	150	PtL	V Dk Br	-	<2			
	280	HCL	V Dk Gr Br	Och – many	<2			
	350	HCL	Dk Gr	Och – many	<2			
	1000	C	Gr	Och – ab		3	We	3a

APPENDIX 3 – LABORATORY ANALYSIS

See following page



ANALYTICAL REPORT

Report Number	91163-20	X922	ROSEMARY PEEL	Client	ROSEMARY PEEL
Date Received	09-MAR-2020		RSK ADAS LTD	1010409	
Date Reported	16-MAR-2020		PARKFIELD COTTAGE	BIRTLEY 03 03 2020	
Project	1010409 BIRTLEY 03 03 20		POLLARDS LANE		
Reference	ROSEMARY PEEL		SOUTHWELL		
Order Number			NOTTS NG25 OTL		

Laboratory Reference		SOIL472687	SOIL472688							
Sample Reference		PIT 1 0-250	PIT 2 0-250							
Determinand	Unit	SOIL	SOIL							
pH water [1:2.5]		6.3	6.5							
Available Phosphorus (Index)	mg/l	8.4 (0)	14.8 (1)							
Available Potassium (Index)	mg/l	66.8 (1)	165 (2-)							
Available Magnesium (Index)	mg/l	198 (4)	265 (5)							
Sand 2.00-0.063mm	% w/w	43	24							
Silt 0.063-0.002mm	% w/w	32	36							
Clay <0.002mm	% w/w	25	40							
Organic Matter LOI	% w/w	10.1	15.1							
Textural Class **		MCL	C							

Notes

Analysis Notes The sample submitted was of adequate size to complete all analysis requested.
 The results as reported relate only to the item(s) submitted for testing.
 The results are presented on a dry matter basis unless otherwise stipulated.

Document Control **This test report shall not be reproduced, except in full, without the written approval of the laboratory.**

Reported by **Myles Nicholson**
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** Please see the attached document for the definition of textural classes.

ADAS (UK) Textural Class Abbreviations

The texture classes are denoted by the following abbreviations:

Class	Code
Sand	S
Loamy sand	LS
Sandy loam	SL
Sandy Silt loam	SZL
Silt loam	ZL
Sandy clay loam	SCL
Clay loam	CL
Silt clay loam	ZCL
Clay	C
Silty clay	ZC
Sandy clay	SC

For the *sand*, *loamy sand*, *sandy loam* and *sandy silt loam* classes the predominant size of sand fraction may be indicated by the use of prefixes, thus:

vf	Very Fine (more than 2/3's of sand less than 0.106 mm)
f	Fine (more than 2/3's of sand less than 0.212 mm)
c	Coarse (more than 1/3 of sand greater than 0.6 mm)
m	Medium (less than 2/3's fine sand and less than 1/3 coarse sand).

The subdivisions of *clay loam* and *silty clay loam* classes according to clay content are indicated as follows:

M	medium (less than 27% clay)
H	heavy (27-35% clay)

Organic soils i.e. those with an organic matter greater than 10% will be preceded with a letter O.

Peaty soils i.e. those with an organic matter greater than 20% will be preceded with a letter P.

APPENDIX 4 – DESCRIPTION OF THE GRADES AND SUBGRADES

The ALC Grades and Subgrades are described below in terms of the types of limitation which can occur, typical cropping range and the expected level and consistency of yield. In practice, the grades are defined by reference to the land's physical characteristics, for which the cut-offs are described in Section 3 of the 1988 MAFF (now Defra) ALC guidelines. The most productive and flexible land falls into Grades 1, 2 and Subgrade 3a and collectively comprises about one-third of the agricultural land in England and Wales. About half the land is either of moderate quality (Subgrade 3b) or poor quality (Grade 4). Although less significant on a national scale, such land can be locally valuable to agriculture and the rural economy where poorer farmland predominates. The remainder is very poor quality land in Grade 5, which mostly occurs in the uplands.

Descriptions are also given of other land categories which may be used on ALC maps.

Grade 1 - excellent quality agricultural land

Land with no or very minor limitations to agricultural use. A very wide range of agricultural and horticultural crops can be grown and commonly includes top fruit, soft fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality.

Grade 2 - very good quality agricultural land

Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural and horticultural crops can usually be grown but on some land in the grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than on Grade 1 land.

Grade 3 - good to moderate quality agricultural land

Land with moderate limitations which affect the choice of crops, timing and type of cultivation, harvesting or the level of yield. Where more demanding crops are grown yields are generally lower or more variable than on land in Grades 1 and 2.

Subgrade 3a - good quality agricultural land

Land capable of consistently producing moderate to high yields of a narrow range of arable crops, especially cereals, or moderate yields of a wide range of crops including cereals, grass, oilseed rape, potatoes, sugar beet and the less demanding horticultural crops.

Subgrade 3b - moderate quality agricultural land

Land capable of producing moderate yields of a narrow range of crops, principally cereals and grass or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year.

Grade 4 - poor quality agricultural land

Land with severe limitations which significantly restrict the range of crops and/or level of yields. It is mainly suited to grass with occasional arable crops (e.g. cereals and forage crops) the yields of which are variable. In moist climates, yields of grass may be moderate to high but there may be difficulties in utilisation. The grade also includes very droughty arable land.

Grade 5 - very poor quality agriculture land

Land with very severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

Appendix B

GEOPHYSICAL SURVEY REPORT

**ARCHAEOLOGICAL EVALUATION REPORT:
GEOPHYSICAL SURVEY BY MAGNETOMETRY AND TOPOGRAPHIC SURVEY: LAND OFF SMITHY
LANE, LAMESLEY, GATESHEAD,**

NGR: NZ 2542 5816
AAL Site Code: GALA 20
Planning Inspectorate Scheme Reference: TR010031
OASIS Reference Number: allenarc1-385738



Report prepared for WSP

By
Allen Archaeology Limited
Report Number AAL 2020028

February 2020



Allenarchaeology



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Document Control

Element:	Name:	Date:
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Report reviewed by:	Chris Clay BA MA (Hons)	20/02/2020
Version no.:	1.0	21/02/2020

Cover image: General view across the site from the southwest corner looking northeast

Executive Summary

- Allen Archaeology Limited was commissioned by WSP to undertake a geophysical survey by magnetometry on land off Smithy Lane, Lamesley, Gateshead, in order to inform a planning decision on the use of an additional area of land for the A1 Birtley to Coal House Scheme.
- There is little evidence for archaeological activity close to the site, with no evidence for prehistoric or Romano-British activity. By the medieval period the site lay within land associated with the village of Lamesley, with evidence for ridge and furrow cultivation, hollow ways, flood defences and field systems located nearby.
- The topographic/earthwork survey revealed no features of archaeological interest and so Lidar data is presented to show non-archaeological features. There were clear earthworks relating to former river/stream channels running roughly from east-northeast to west-southwest across the larger field.
- The geophysical survey revealed very little of archaeological interest. The main features revealed were a group of palaeochannels running across the larger field, corresponding with the topography of the site, and probably representing former small tributaries of the River Team. A possible continuation of these channels was noted in the smaller, eastern field, but this could also be former ditches.
- Probable cultivation trends were noted in both fields, and the survey also identified a former field boundary close to the southeastern edge of the larger field, and a modern service.
- The results of the topographic survey, combined with the results of geophysical survey, suggest a low archaeological potential for the proposed development area.

1.0 Introduction

- 1.1 Allen Archaeology Limited was commissioned by WSP to undertake a geophysical and topographic survey by magnetometry on land off Smithy Lane, Lamesley, Gateshead, in order to inform a planning decision on the use of an additional area of land for the A1 Birtley to Coal House Scheme.
- 1.2 The site works and reporting conform to current national guidelines, as set out in 'EAC Guidelines for the Use of Geophysics in Archaeology' (EAC 2016), 'The Use of Geophysical Techniques in Archaeological Evaluations' (Gaffney et al. 2002), and the Chartered Institute for Archaeologists 'Standard and guidance for archaeological geophysical survey' (ClfA 2014).

2.0 Site Location and Description

- 2.1 Lamesley is a village and civil parish in the Metropolitan Borough of Gateshead, Tyne and Wear. Lamesley is located 4km south of the centre of Gateshead and 14.5km east of Sunderland. The proposed development area comprises a sub-rectangular area of c.3.2ha to the north of Smithy Lane, centred on NGR NZ 2542 5816 (Figure 1).
- 2.2 The bedrock geology comprises Pennine Middle Coal Measures Formation, with glaciolacustrine superficial deposits of clay and silt (<http://mapapps.bgs.ac.uk/geologyofbritain/home.html>). The bedrock of interbedded mudstone, siltstone, sandstone and coal seams, are considered to give an average but variable response to magnetometry whilst the superficial deposits give an average to poor response depending on the depth of the buried feature (English Heritage 2008).

3.0 Planning Background

- 3.1 Highways England have proposed an improvement scheme for the A1 between Birtley and Coal House (Scheme Number: TR010031), in order to increase capacity along the A1 between junction 67 (Coal House) and junction 65 (Birtley). An additional area of land adjacent to Smithy Lane has been added to the scheme to accommodate a temporary material stockpile during construction, and a geophysical and topographic survey have been requested for this area.
- 3.2 The approach adopted is consistent with the recommendations of the National Planning Policy Framework (NPPF), with the particular chapter of relevance being 'Section 16. Conserving and enhancing the historic environment' (Ministry of Housing, Communities and Local Government 2019).

4.0 Archaeological and Historical Background

- 4.1 A historic environment desk-based assessment (Highways England 2019) was prepared for the entire scheme, and the information relevant to the survey site and surrounding area is summarised below.
- 4.2 There are no known remains from the prehistoric period within or close to the site.
- 4.3 There are no known remains from the Romano-British period within the site area, however the Roman road between Gateshead and Chester-le-Street has a projected route which runs north to south approximately 1.7km to the east of the site.

- 4.4 There is no evidence for early medieval activity and Lamesley is not mentioned in the Domesday Book of 1086, but during the late medieval the landscape is characterised by Manors as the economic and social units of life, which encompassed a manor house, village(s), and land divided into meadow, pasture, forest and cultivated fields. Lamesley has been identified as one of the villages within a manorial system, with evidence for field systems, ridge and furrow farming practices, flood defences and hollow ways present.
- 4.5 During the post-medieval period the area around Lamesley retained a rural economy with cottages and farms predominating.

5.0 Topographic/Earthwork Survey

- 5.1 The survey was based on a Level 2 record of the earthworks (English Heritage 2007).
- 5.2 The topographic/earthwork survey was undertaken by an experienced archaeological surveyor on Thursday 13th February 2020. The survey was undertaken using a survey grade GPS unit receiving RTK corrections, to produce an accuracy of c.+/- 20mm. No archaeological earthworks were identified on site and as such an interpretative was not produced.
- 5.3 A full photographic record was made of the site, capturing images of ground conditions at the time of the survey.

6.0 Geophysical Survey Methodology

- 6.1 The geophysical survey consisted of a detailed gradiometer survey of the maximum available area available for survey, extending to 2.8 hectares of the 3.2 hectares. The survey was undertaken in a series of 30m grids across the site.
- 6.2 The survey was carried out by two experienced geophysicists from AAL over a period of two days from Thursday 13th to Friday 14th February 2020. The area surveyed was located using a Leica GS08 RTK NetRover GPS. This accurately 3D plotted the area of investigation and tied it into the National Grid.
- 6.3 The geophysical survey was carried out using a Bartington Grad601-2 Dual Fluxgate Gradiometer with an on-board automatic DL601 data logger. This instrument is a highly stable magnetometer which utilises two vertically aligned fluxgates, one positioned 1m above the other. This arrangement is then duplicated and separated by a 1m cross bar. The 1m vertical spacing of the fluxgates provides for deeper anomaly detection capabilities than 0.5m spaced fluxgates. The dual arrangement allows for rapid assessment of the archaeological potential of the site. Data storage from the two fluxgate pairs is automatically combined into one file and stored using the on-board data logger.
- 6.4 Data collection was undertaken in a zigzag traverse pattern, using a sample interval of 0.25m and a traverse interval of 1m.

Summary of Survey Parameters

6.5 Fluxgate Magnetometer

Instrument: Bartington Grad601-2 Dual Fluxgate Gradiometer

Sample Interval:	0.25m
Traverse Interval:	1.00m
Traverse Separation:	1.00m
Traverse Method:	Zigzag
Resolution:	0.01nT
Processing Software:	3.0.36.0
Surface Conditions:	Pasture
Area Surveyed:	2.8 hectares
Date Surveyed:	Thursday 13 th to Friday 14 th February 2020
Surveyors:	Robert Evershed BSc (Hons)
Survey Assistants:	Karen Austin
Data Interpretation:	Robert Evershed BSc (Hons)

Data Collection and Processing

6.6 The survey area was marked out using pre-programmed grids on the Leica GS08 RTK Net rover GPS. A north-south alignment is preferable as the fluxgate gradiometer is set up and balanced with respect to the cardinal points. Since the data is plotted as north-south traverses there is considerable merit sampling the north-south response of a magnetic anomaly with as many data points as is possible, this is accomplished as the density collected along the traverse line is greater than that between traverses (Aspinall *et al.* 2008). For this survey a north – south alignment was used due to the orientation of the fields.

6.7 The data collected from the geophysical survey has been analysed using Terrasurveyor 3.0.36.0. The resulting data set plots are presented with positive nT/m values and high resistance as black and negative nT/m values and low resistance as white.

The data sets have been subjected to processing using the following filters:

- De-stripping
- Clipping
- De-staggering

6.8 The de-stripe process is used to equalise underlying differences between grids or traverses. Differences are most often caused by directional effects inherent to magnetic surveying instruments: instrument drift, instrument orientation (for example off-axis surveying or heading errors) and delays between surveying adjacent grids. However, the de-stripe process is used with care as it can sometimes have an adverse effect on linear features that run parallel to the orientation of the process.

6.9 The clipping process is used to remove extreme data point values which can mask fine detail in the data set. Excluding these values allows the details to show through.

6.10 The de-staggering process compensates for data correction errors caused by the operator commencing the recording of each traverse too soon or too late. It shifts each traverse forward or backwards by a specified number of intervals.

6.11 Plots of the data are presented in processed linear greyscale (smoothed) with any corrections to the measured values or filtering processes noted, and as separate simplified graphical interpretations of the main anomalies detected.

7.0 Topographic/Earthwork Survey Results

- 7.1 No earthworks of archaeological interest were identified within the site's boundaries. The topographic survey revealed variations of natural origin, curvilinear hollows, within the larger field, with clear features related to former stream/river channels running through the site, roughly from east-northeast to west-southwest (Figure 7).
- 7.2 Within the smaller, eastern field there were slightly lower areas, these were easily identified on site as they were flooded during the site visit. No features within this area corresponded with ridge and furrow activity, which had been anticipated, or any other archaeological activity.

8.0 Geophysical Results

- 8.1 For the purposes of interpreting the anomalies, the survey data has been processed to the values of -3 to 3 nT/m (Figure 3). This enhances faint anomalies that may otherwise not be noted in the data, with a number of anomalies identified across the data set, and these are discussed in turn and noted as single or double-digit numbers in square brackets.
- 8.2 The site was extremely wet with some areas of standing water. This meant that a small area at the southwestern end of the site, and some larger areas at the northeastern end of the site were not suitable for surveying. The site was divided into two areas with a fence line running north-northwest to south-southeast, with a larger area to the west of the fence and the smaller area to the east (Plate 1 and Plate 2).



Plate 1: Flooded area at the southwest end of the site, looking southwest



Plate 2: Flooded areas at the northeast end of the site, looking north

- 8.3 Along the southern edge of the larger field there was an area of magnetic noise [1], with readings up to -100 to 100 nT/m. This probably corresponds to a combination of a build-up of modern waste and the metal fence along the field edge.
- 8.4 At the southwest corner of the site there is a linear dipolar feature [2], -100 to 100 nT/m, which probably relates to a modern service. On the 1939 historic OS map (Figure 6) an electrical cable and post is shown within this location, and it is likely that this feature represents the modern electrical cable, now buried.
- 8.5 The area of magnetic noise along the northwestern edge of the larger field [3], -100 to 100 nT/m, represents the metal fence running along the edge of the site.
- 8.6 The areas of magnetic noise [4] and [5], both producing readings of -100 to 100 nT/m, represent a metal container/horse box, and a metal gate and fenced off area respectively.
- 8.7 The area of magnetic noise along the northwestern edge of the smaller field [6], -100 to 100 nT/m, represents metal fencing along that edge.
- 8.8 The area of magnetic noise [7], -100 to 100 nT/m, represents the metal fence running along that edge of the site.
- 8.9 The positive linear anomaly [8], 6 nT/m, with a potential linear dipolar feature at the eastern end, -20 to 20 nT/m, represents a former field boundary seen on the 2nd Edition OS map (Figure 6).
- 8.10 Running across the northern half of the larger field was a series of positive curvilinear features [9], 1 to 6 nT/m, which represent former stream channels running across the site. These correspond with the topography of the site (Figure 7).
- 8.11 Aligned roughly north-northwest to south-southeast across the larger field are a few potential positive and negative linear features [10], 1 to 3 nT/m and -1 to -2 nT/m respectively. These probably represent field drains or former cultivation trends.

- 8.12 There are a few shorter potential positive linear features within the larger field [11], 0.5 to 1 nT/m. These may represent waterlogging or geological variation.
- 8.13 At the northern end of the smaller field there are a few short linear positive features [12], 1 to 3 nT/m. Whilst it is likely these relate to the former stream channels within the larger field, it is possible that they do represent anthropogenic activity such as ditches or boundary/enclosure features.
- 8.14 Aligned roughly north-northeast to south-southwest across the smaller field are a number of parallel positive features [13], 1 to 3 nT/m. These features probably represent former cultivation trends or vehicle tracks, but could also represent ditches.
- 8.15 Scattered throughout the entire site, are a number of strong and weak dipolar responses, examples of which are highlighted in the larger field as [14]. The characteristic dipolar response of pairs of positive and negative 'spikes' suggest near-surface ferrous metal or other highly fired material in the topsoil. The greater the density of dipolar spikes, the more modern waste there is likely to be within the topsoil.

9.0 Discussion and Conclusions

- 9.1 The topographic/earthwork survey revealed no features of archaeological interest. The principal features noted were linear hollows running across the larger field and corresponding with the stream channels identified by the geophysics.
- 9.2 The geophysical survey also revealed very few features of archaeological interest. In the larger field is a group of positive curvilinear features which represent former stream channels. The topography of the field also suggests this interpretation. It is likely that these channels represent small tributaries carrying water from the high ground to the east, down to the River Team, located a short distance to the west of the site. The date of these channels, and whether they retain any palaeoenvironmental potential cannot be established by non-intrusive survey.
- 9.3 There are linear positive and dipolar features along the southeastern edge of the larger field that correspond with a former field boundary and an electrical modern service. Positive and negative linear feature running north-northwest to south-southeast across the larger field probably represent modern cultivation trends or land drainage.
- 9.4 Within the smaller field there are long linear features aligned north-northwest to south-southeast which likely represent former cultivation trends, and positive features at the northern end of the field which might represent anthropogenic activity such as former ditches, boundary or enclosure features, but it seems more likely these present the continuation of the palaeochannels from the field to the west.
- 9.5 There were a few unsurveyed areas, due to flooding, especially in the smaller field, where it is possible that archaeological features could be located, but in general across the site there is very little of archaeological interest and no discernible earthwork features. Should proposed groundworks entail topsoil stripping, then further investigation of the palaeoenvironmental potential may provide useful information.

10.0 Effectiveness of Methodology

- 10.1 The non-intrusive survey methodology employed was appropriate to the scale and nature of the site and, combined with the number of non-intrusive and intrusive surveys in the vicinity, suggests there is limited archaeological potential for the site.

11.0 Acknowledgements

- 11.1 Allen Archaeology Limited would like to thank WSP for this commission.

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Ministry of Housing, Communities and Local Government, 2019, *National Planning Policy Framework*. London: Department for Communities and Local Government

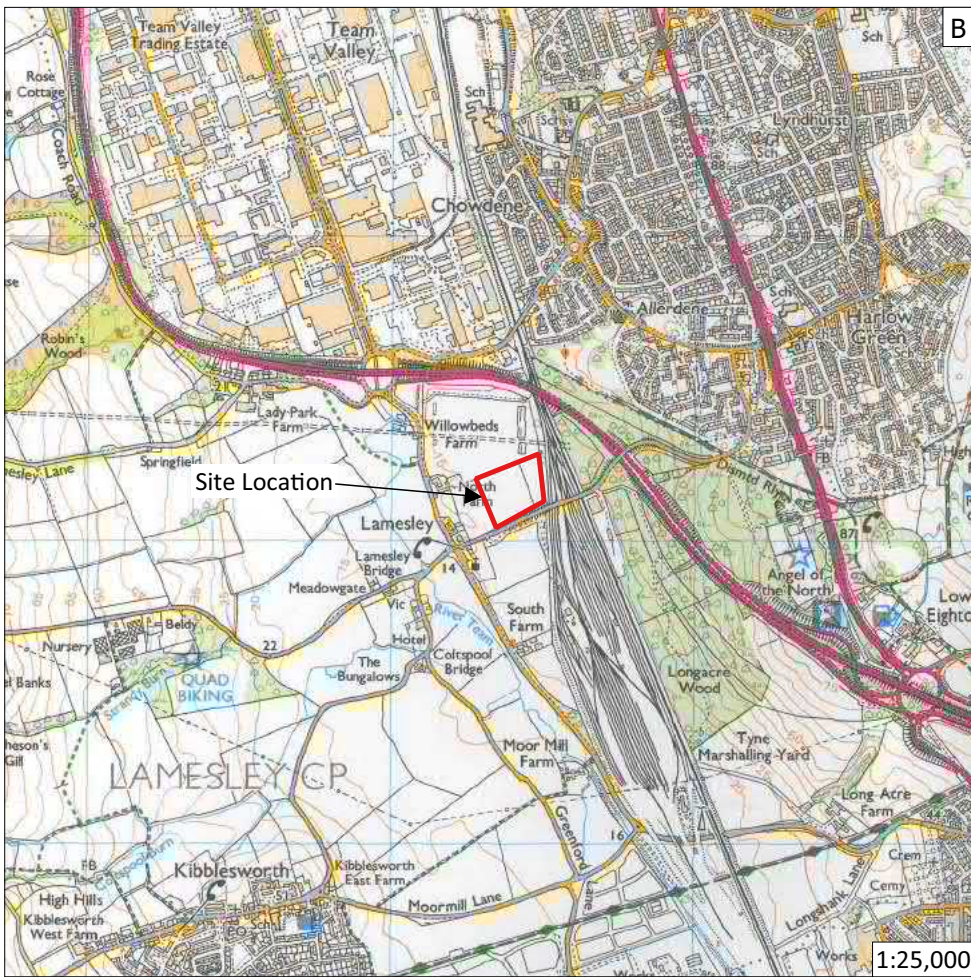
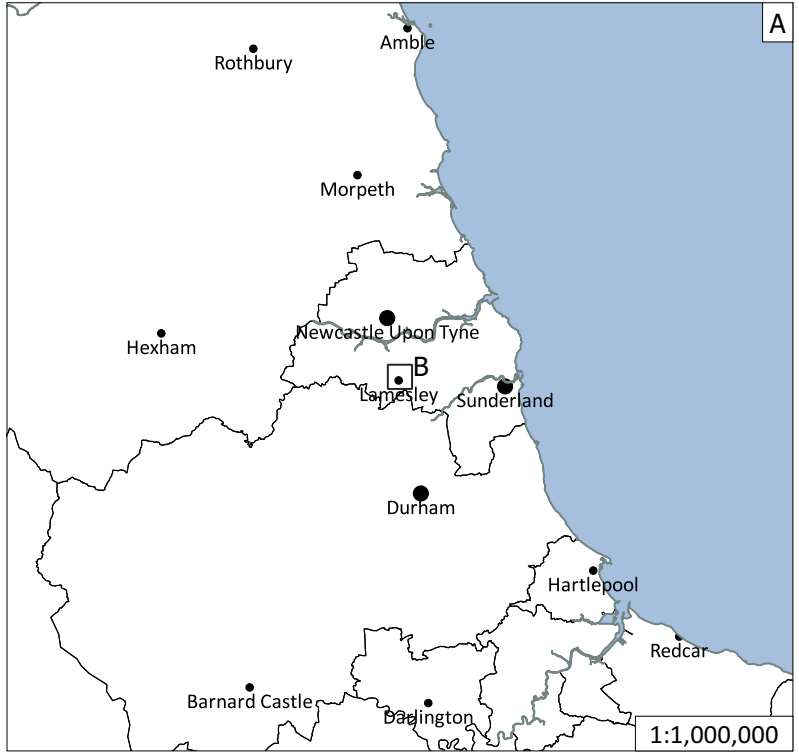
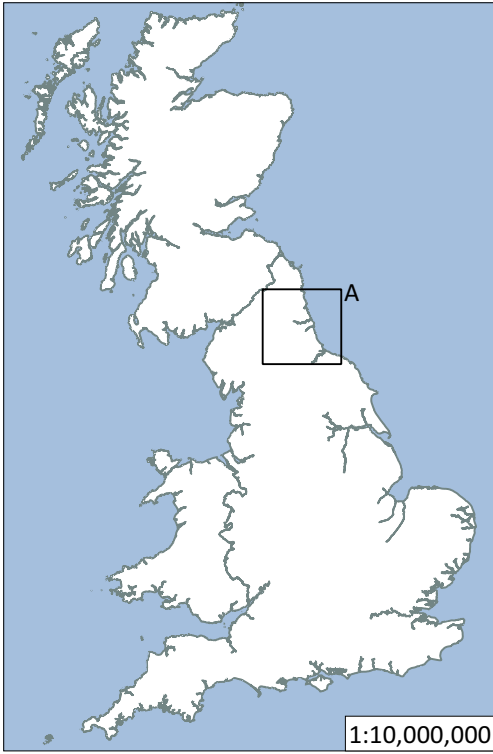
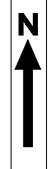


Figure 1: Site location outlined in red

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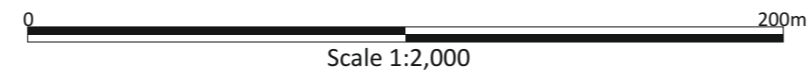
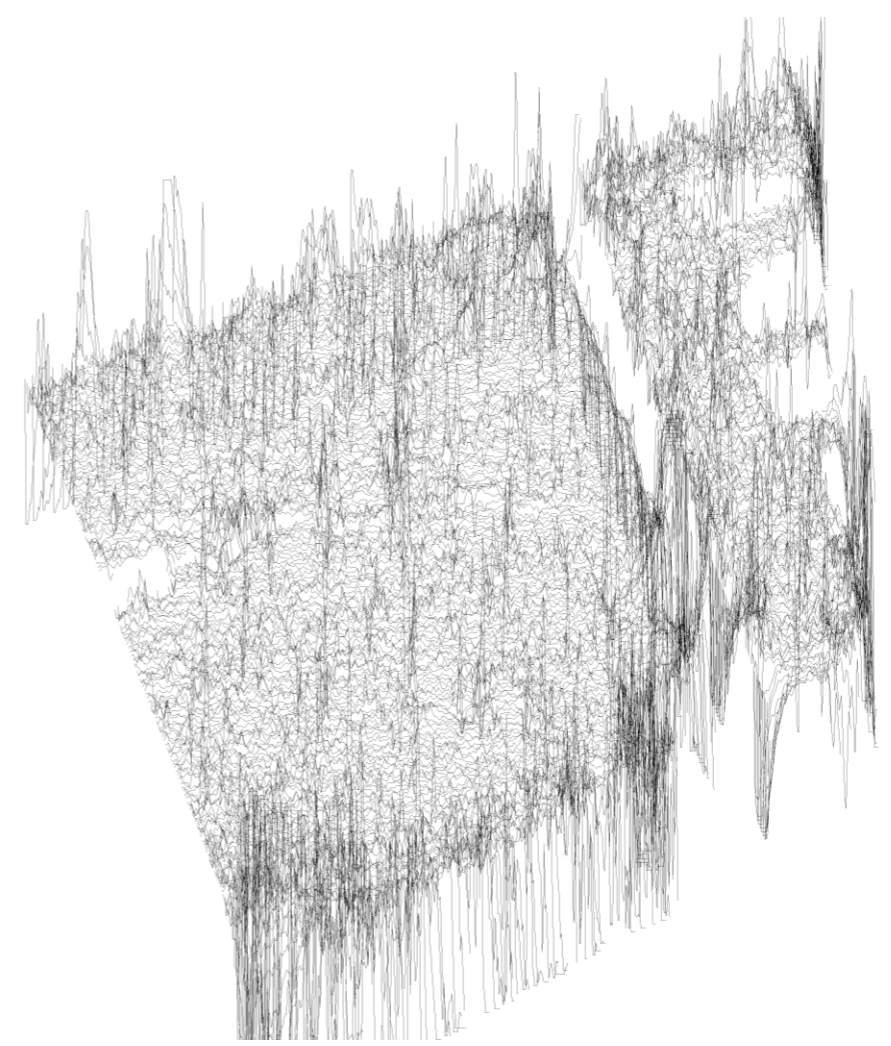
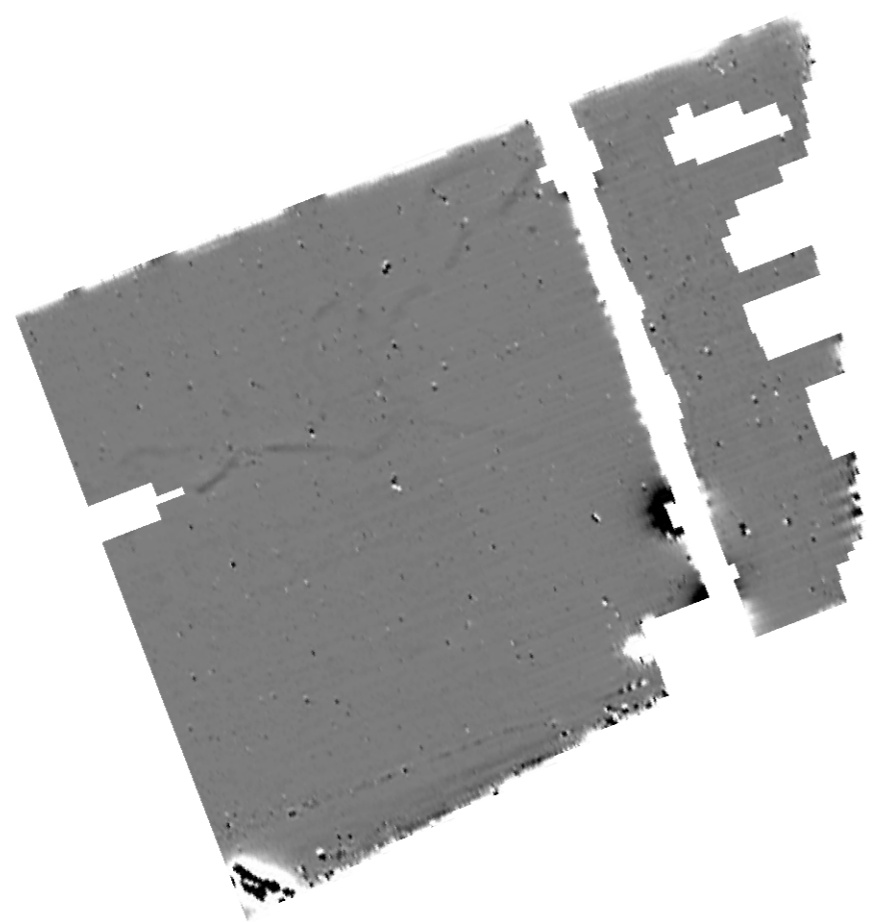
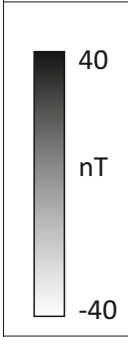
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Drawn by	R Evershed
Date	17/02/20

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Raw data (clipped to +/- 40 nT)

Trace Plot (ZMT and clipped to +/- 25nT)



Site Code	GALA 20
Scale	1:2,000 @ A3
Drawn by	R Evershed
Date	17/02/20

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Figure 2: Greyscale raw data and processed trace plot

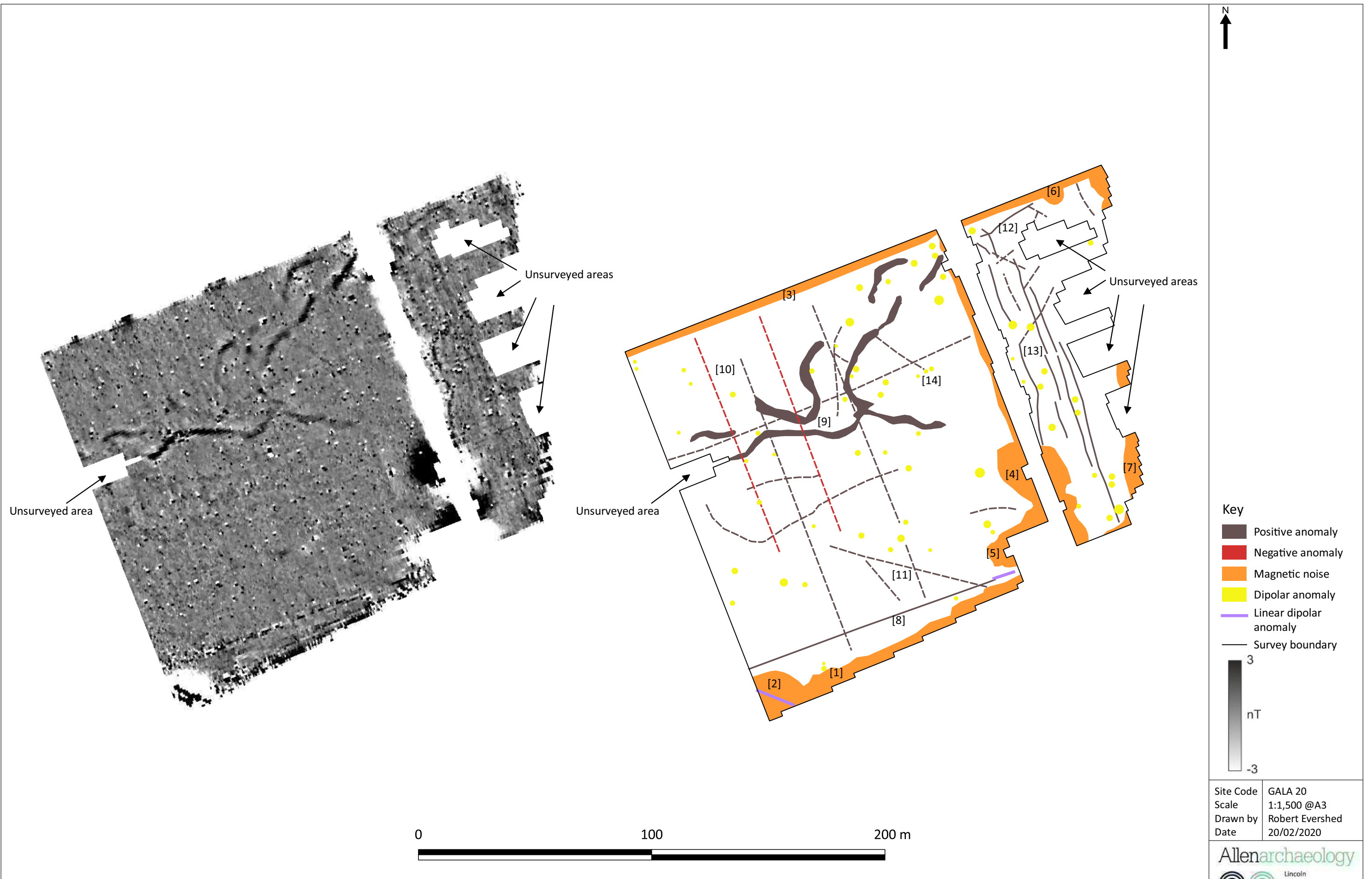


Figure 3: Processed greyscale plot and interpretation



Figure 4: Processed greyscale location

Key

Site boundary

3
nT
-3

Site Code	GALA 20
Scale	1:1,500 @ A3
Drawn By	R Evershed
Date	20/02/2020

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Key

- Positive anomaly
- Negative anomaly
- Magnetic noise
- Dipolar anomaly
- Linear dipolar anomaly
- Survey boundary
- Site boundary

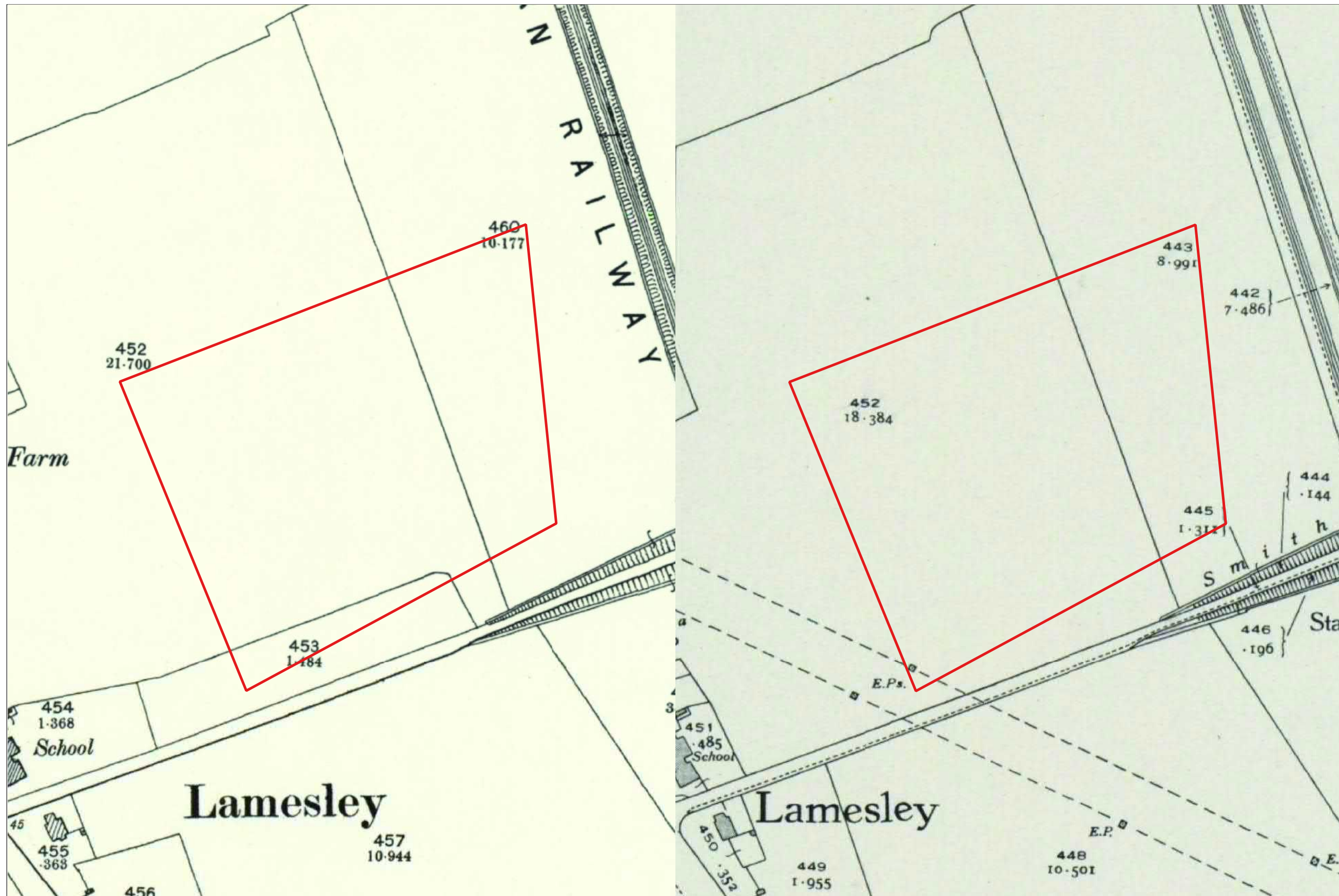
Site Code	GALA 20
Scale	1:1,500 @ A3
Drawn By	R Evershed
Date	20/02/2020

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Figure 5: Geophysical interpretation location



Key

Site boundary



Site Code	GALA 20
Scale	1:2,000 @A3
Drawn by	Robert Evershed
Date	18/02/2020



Figure 6: Site boundary superimposed over 2nd Edition 1896 and 1939 OS maps

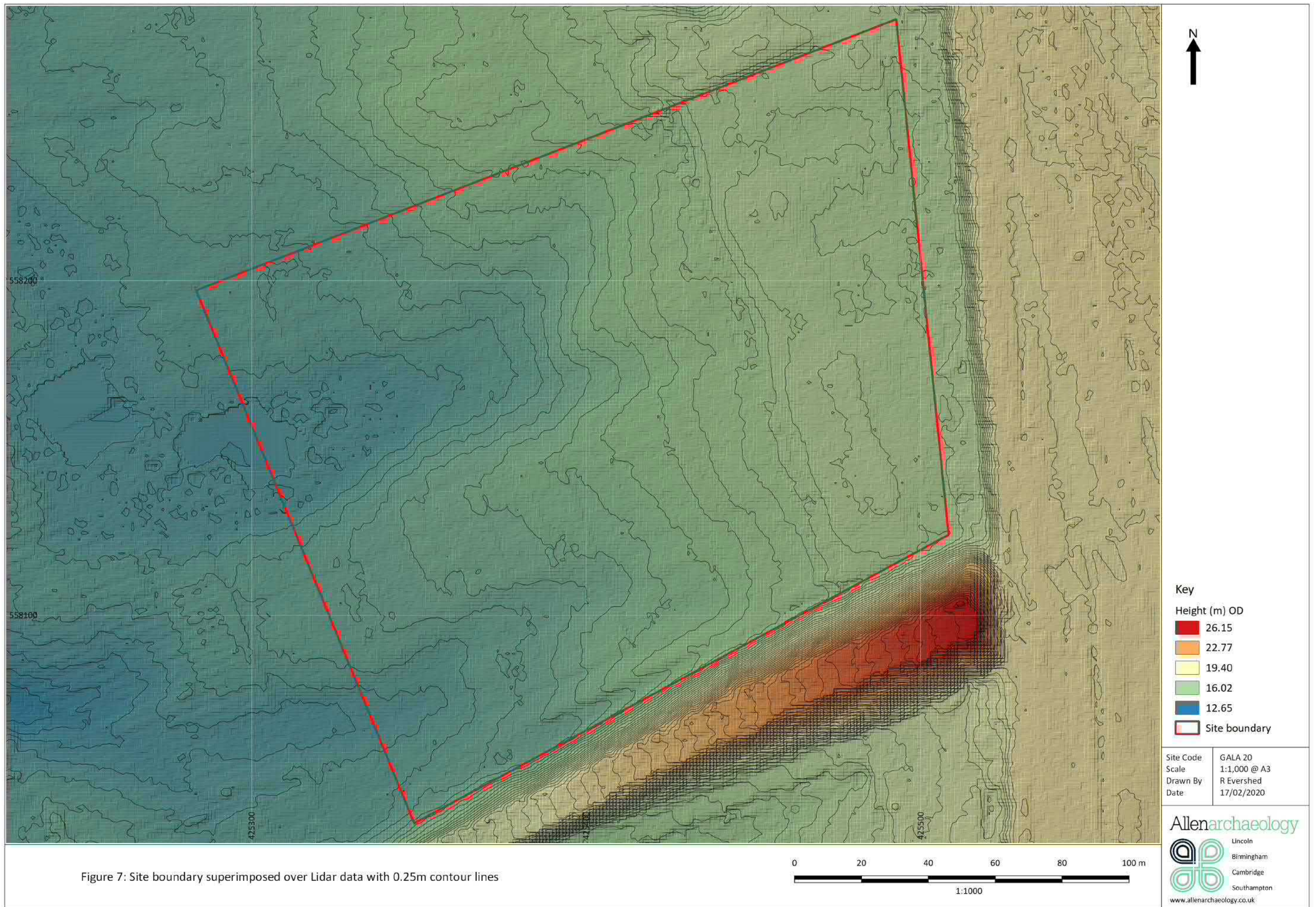
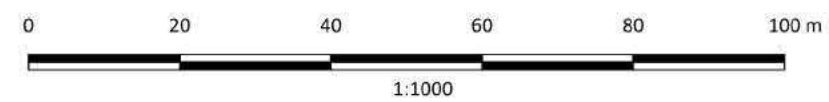


Figure 7: Site boundary superimposed over Lidar data with 0.25m contour lines





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Appendix C

PRELIMINARY ECOLOGICAL APPRAISAL (PEA)

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EXECUTIVE SUMMARY

WSP Ltd. (WSP) was commissioned by Highways England to undertake a Preliminary Ecological Appraisal in support of the proposed widening scheme of the A1 between Birtley and Coal House. The A1 Birtley to Coal House improvement scheme consists of the widening and upgrading of the existing road to provide a four-lane carriageway on the southbound and three lanes on the northbound and replacement of Allerdene Railway Bridge. This is hereby referred to as the "Scheme".

An extended Phase 1 assessment of the former Scheme Footprint (as designed in the ES) was completed in 2018 (**Appendix 8.1: Preliminary Ecological Appraisal, Volume 3** of the ES [**APP-123**]). This report is provided as an addendum to the existing assessment, so as to include assessment of an area of land incorporated into the Scheme Footprint in January 2020. The additional land (the "Site") is directly adjacent to previously surveyed land in Lamesley, Gateshead.

This report comprises a desk study, a field survey and appraisal/recommendations. The desk study reviewed and collated publicly available data and requested biological records to gather existing information regarding the presence of protected sites, habitats, and important or protected/notable species on or within proximity to the Site. The field survey was undertaken in February 2020 and comprised a walkover of the Site to document the habitats present and their suitability to support protected/notable species.

The desk study identified two non-statutory designated sites within 200m of the Site. These were Lamesley Meadows Local Wildlife Site (LWS) and the River Team Extension LWS.

A number of habitats were recorded on the Site, including poor semi-improved grassland (grazed pasture), scattered scrub, scattered trees, tall ruderal and boundary features such as hedgerows, fences and walls. The habitats present both within and bordering the Site were suitable to support bats, wintering and breeding birds.

To ensure compliance with legislation and planning policy, further survey effort is recommended, with several of these surveys already underway or completed. The recommended further surveys are outlined within this report, with the findings to be presented in separate reports).

The impacts during construction and operation of the Scheme in relation to the Site will be fully assessed and presented within an addendum impact assessment report, which shall support the ecological impact assessment presented in **Chapter 8: Biodiversity, Volume 1** of the Environmental Statement [**APP-029**]. The ES Addendum will also contain details of additional proposed avoidance, mitigation and compensation measures to those detailed in **Chapter 8: Biodiversity**, if required to address additional predicted impacts.

1. INTRODUCTION

1.1. PROJECT BACKGROUND

- 1.1.1. WSP Ltd. (WSP) was commissioned by Highways England to undertake a Preliminary Ecological Appraisal (PEA) of an area of land in relation to the proposed widening scheme of the A1 between Birtley and Coal House (the “Scheme”). The area of land (the “Site”) was incorporated into the Scheme Footprint in January 2020 and is situated to the north-east of the village of Lamesley, Gateshead, Tyne and Wear (central national grid reference NZ 25334 58123). This report is provided as an addendum to the Environmental Statement (ES).
- 1.1.2. Under current proposals, a temporary construction compound is to be created within the Site. The temporary compound would be used as a base for plant storage during construction of the Scheme. A full description of the Scheme is detailed in **Chapter 2: The Scheme, Volume 1** of the ES [APP-029].

1.2. ECOLOGICAL BACKGROUND

- 1.2.1. An ecological appraisal was completed for the former Scheme Footprint, including land directly north of the Site in 2018 (**Appendix 8.1: Preliminary Ecological Appraisal, Volume 3** of the ES [APP-123]). This was used to inform the ecological impact assessment within **Chapter 8: Biodiversity** of the ES.
- 1.2.2. Habitats recorded on the land directly to the north of the Site included poor semi-improved grassland, scattered trees, scattered scrub, buildings and hard standing. From an initial review of aerial imagery, the habitats within the Site appear to be of similar types.

1.3. SCOPE OF REPORT

- 1.3.1. Highways England commissioned WSP to complete a PEA of the Site in February 2020. The brief was:
- To provide baseline ecological information about the Site and a surrounding study area with particular reference to whether legally protected and/or notable sites, species or habitats are present or likely to be present;
 - To provide recommendations to enable compliance with relevant nature conservation legislation and planning policy; and
 - Where necessary, to identify the need for avoidance, mitigation, compensation or enhancement measures and/or further ecological surveys.

1.4. RELEVANT LEGISLATION AND POLICY

- 1.4.1. The appraisal has been compiled with reference to the following relevant nature conservation legislation, planning policy and the UK Biodiversity Framework from which the protection of sites, habitats and species is derived in England. The context and applicability of each item is explained as appropriate in the relevant sections of the report and additional details are presented in **Appendix A**.
- The Conservation of Habitats and Species Regulations 2017 (as amended) (the Habitats Regulations);
 - Wildlife and Countryside Act (WCA) 1981 (as amended);

- Countryside Rights of Way Act 2000;
- Natural Environment and Rural Communities (NERC) Act 2006 (England);
- Protection of Badgers Act 1992;
- The Hedgerow Regulations 1997;
- Wild Mammals (Protection) Act 1996;
- The UK Post-2010 Biodiversity Framework (2011-2020) (JNCC and DEFRA, 2012);
- Biodiversity 2020: A strategy for England's wildlife and ecosystem services (DEFRA, 2011);
- UK Biodiversity Action Plan (UKBAP)¹;
- National Planning Policy Framework (NPPF) 2019 (Ministry of Housing Communities & Local Government, February 2019);
- Planning for the Future – Core Strategy and Urban Core Plan for Gateshead and Newcastle-upon-Tyne 2010-2020 (hereby referred to as the 'Local Plan')
- Action for Wildlife: The Durham Biodiversity Action Plan (applicable for Gateshead)
- Highways England Biodiversity Plan, June 2015

¹ The UK BAP has now been replaced by the UK Post-2010 Biodiversity Framework, however, it contains useful information on how to characterise important species assemblages and habitats which is still relevant.

2. METHODS

2.1. OVERVIEW

2.1.1. This appraisal has been prepared with reference to current good practice guidance published by the Chartered Institute for Ecology and Environmental Management (CIEEM) (CIEEM, 2017a) and Joint Nature Conservation Committee (JNCC) (JNCC, 2010); and guidance contained in the British Standard - Code of Practice for Biodiversity and Development BS42020:2013 (British Standards Institution (BSI), 2013).

2.1.2. This PEA is based on the following data sources:

- An ecological desk study;
- A habitat survey; and
- A protected/notable species assessment.

2.2. DESK STUDY

2.2.1. A desk study was undertaken in February 2020 to review existing ecological baseline information available in the public domain and to obtain information held by relevant third parties. For the purpose of the desk study exercise, records obtained from the Environmental Records Information Centre (ERIC) North East in 2018 (protected/notable species) and 2019 (non-statutory sites) were consulted. Records were obtained within various distances around the former Scheme Footprint. The search areas are consistent with current good practice guidance published by the CIEEM (2017b and 2018). Records within the following distances were obtained:

- Legally protected and notable species within 2km of the former Scheme Footprint;
- Bat records within 5km of the former Scheme Footprint; and
- Records of non-statutory sites designated for nature conservation value within 2km of the former Scheme Footprint.

2.2.2. The findings of the 2018 desk study records have been incorporated within Section 3 and **Appendix B** of this report. It should be noted that the records were obtained within proximity to the entirety of the former Scheme Footprint (at the time of the data search, 2018/19) and therefore may occur at greater distances from the Site than the search distances stated above. This has been considered within this report and only records within 2km of the Site have been considered relevant.

2.2.3. Freely downloadable datasets (available from Natural England) were consulted for information regarding the presence of statutory designated habitats² within 2km of the Site. This search was extended to 10km for Natura 2000 sites (Special Areas of Conservation (SAC) and Special Protection Areas (SPA)) of European importance and internationally designated Ramsar sites).

² Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR) and Local Nature Reserves (LNR).

- 2.2.4. Records of Habitats of Principal Importance (HPI)³ within 2km of the Site were provided by ERIC North East, although these were used for reference only. Freely downloadable datasets (available from Natural England) were consulted for information regarding woodland listed on the Ancient Woodland Inventory⁴ within 2km of the Site.
- 2.2.5. In addition, open source 1:25,000 Ordnance Survey mapping was used to identify any mapped water bodies and watercourses within 500m of the Site.
- 2.2.6. The ecological desk study was carried out by an Assistant Ecologist, who has completed numerous ecological desk studies.

2.3. HABITAT SURVEY

- 2.3.1. A Phase 1 habitat survey of the Site was carried out on 05 February 2020 in clear, dry conditions. The survey covered the entire Site including boundary features. The Phase 1 habitat survey was carried out by a Consultant and Assistant Ecologist, both of whom have extensive experience of completing similar assessments.
- 2.3.2. Habitats were described and mapped following the standard Phase 1 habitat survey methodology (JNCC, 2010). Phase 1 habitat survey is a standard technique for classifying and mapping British habitats. The dominant plant species were recorded and habitats are classified according to their vegetation types. Where appropriate consideration was given to whether habitats qualify, or could qualify, as a HPI following habitat descriptions published by the JNCC (JNCC, 2008).
- 2.3.3. A list of plant species was compiled (**Appendix C**), with relative plant species abundance estimated using the DAFOR scale⁵. The scientific names for plant species follow those in the New Flora of the British Isles (Stace, 2019) and are also listed in **Appendix C**.
- 2.3.4. Habitats were marked on a paper base map and were subsequently digitised using a Geographical Information System (GIS).
- 2.3.5. Target notes were made to provide information on specific features of ecological interest (e.g. the location of a bat box) or habitat features too small to be mapped. These are included in **Appendix D**.
- 2.3.6. Invasive plant species listed on Schedule 9 of the WCA 1981 (as amended) which were evident during the Phase 1 habitat survey were also recorded in target notes. Detailed mapping of such

³ Mapped locations of HPI are usually not available, but HPI aligns in the most part with UKBAP habitats. Inventories of UKBAP habitat have been prepared by a variety of organisations and at a national (Natural England priority habitat inventory) and local scale (e.g. by local records centres). In some instances these are primarily based on aerial photograph analysis rather than field survey.

⁴ The ancient woodland inventory in England lists areas over two hectares in size which have been continuously wooded since at least 1600.

⁵ The DAFOR scale has been used to estimate the frequency and cover of the different plant species as follows: Dominant (D) - >75% cover, Abundant (A) – 51-75% cover, Frequent (F) – 26-50% cover, Occasional (O) – 11-25% cover, Rare (R) – 1-10% cover., The term 'Locally' (L) is also used where the frequency and distribution of a species are patchy and 'Edge' (E) is also used where a species only occurs on the edge of a habitat type.

species; or a full survey of the Site for all invasive plant species is beyond the scope of this commission.

2.4. SPECIES ASSESSMENT

- 2.4.1. The potential for the Site to support legally protected and notable species was assessed using the desk study results combined with field observations during the Phase 1 habitat survey. The assessment of habitat suitability for protected and notable species was based on professional experience and judgement. This was supplemented by standard sources of guidance on habitat suitability assessment for key faunal groups including: birds (Gilbert et al, 1998 and Bibby et al, 2000), great crested newt *Triturus cristatus* (Gent and Gibson, 2003 and English Nature, 2001); reptiles (Froglife, 1999 and Gent and Gibson, 2003); bats (Collins, 2016 and Mitchell-Jones, 2004); and badger *Meles meles* (Harris et al, 1991 and Roper, 2010).
- 2.4.2. In addition, all water bodies within the Site boundary were assessed for their suitability to support great crested newts, using the standard HSI assessment method (ARG UK, 2010, based on Oldham et al. (2000)).
- 2.4.3. Water bodies were assessed and scored on ten key variables which are known to influence breeding populations of great crested newts, in accordance with standard methods (ARG UK, 2010). These variables are:
- Geographic location;
 - Water body area;
 - Water body permanence;
 - Water quality;
 - Water body shading;
 - Impact of waterfowl;
 - Fish stocks;
 - Number of water bodies within 1km;
 - Terrestrial habitat around the water body; and
 - Macrophyte cover of the water body.
- 2.4.4. Scores for each of the above variables were used to calculate an overall HSI value for each water body. This was then cross referenced with the guidelines (ARG, 2010) to assign the pond to one of five categories, poor, below average, average, good or excellent. Index calculation is not a failsafe method of identifying whether a water body supports great crested newts or not; therefore, professional judgement and availability of records of great crested newt in the locality has also been used to inform the requirement for further survey.
- 2.4.5. Results of HSI assessments and raw data can be found in **Appendix F**.

2.5. NOTES AND LIMITATIONS

- 2.5.1. The following limitations apply to this assessment:
- Ecological survey data is typically valid for two years unless otherwise specified, for example if conditions are likely to change more quickly due to ecological processes or anticipated changes in management.

- Records held by local biological record centres and local recording groups are generally collected on a voluntary basis. Therefore, the absence of records does not demonstrate the absence of species, it may simply indicate a gap in recording coverage.
- The survey was not completed during the optimal survey season for Phase 1 habitat survey, generally accepted to be from April-September (inclusive). Botanical surveys are seasonally limited, and throughout the spring and summer period certain species will be more, or less, evident at different times (i.e. depending on the flowering season). However, it is considered that sufficient information was gathered to enable an assessment of the habitat types present, in line with standard Phase 1 habitat categories and the potential for these to support protected or notable species.
- The Phase 1 Habitat survey was carried out over the period of a single day, as such only a selection of all species that occur within the Site will have been recorded. However, through use of desk study information to supplement site survey data, it is considered that an accurate assessment of the potential for the Site to support protected species or those of conservation concern was possible.
- The extended Phase 1 habitat map (**Figure 1**) has been reproduced from field notes and plans. Whilst this provides a sufficient level of detail to fulfil the requirements of a PEA, the maps are not intended to provide exact locations of key habitats.

3. RESULTS

3.1. DESIGNATED SITES AND HABITATS

STATUTORY SITES

3.1.1. No statutory sites (local, national or international) were identified within the search areas.

NON-STATUTORY SITES

3.1.2. The desk study identified 13 non-statutory nature conservation sites within 2km of the Site. A description of these sites is detailed in **Table 3-1** below and shown on **Figure 2**.

Table 3-1 – Non-Statutory Sites within 2km

Site Name	Designation	Size (ha)	Distance and orientation from Site	Description
Lamesley Meadows	Gateshead LWS	20	0.08km southwest	A site containing permanent pasture, riverbank, ponds and reed beds. The site supports breeding waders such as lapwing <i>Vanellus vanellus</i> , redshank <i>Tringa tetanus</i> and snipe <i>Gallinago gallinago</i> . Otter <i>Lutra lutra</i> have also occasionally been recorded in the River Team.
River Team Extension	Multiple Ownership LWS (Gateshead, Sunderland & Durham Councils)	11.8	0.16km west	The river has several bankside habitats listed under the BAP. The river has two main bankside habitats, which often alternate. In open, grazed land, the river usually has a good selection of aquatic habitat and small stands of branched bur-reed <i>Sparganium erectum</i> . In the wooded sections, the aquatic flora is considerably reduced by shade. The river is interrupted by several bridges and small weirs.
Long Acre Wood	Gateshead LWS	12	0.25km east	A substantial area of semi-natural deciduous woodland in an otherwise industrial and urban setting. The site is considered an important reservoir of local wildlife, with the presence of common spotted <i>Dactylorhiza fuchsia</i> and northern marsh <i>Dactylorhiza purpurella</i> orchids. This site also represents a wildlife corridor crossed by the Scheme.
Lamesley Reedbeds	Gateshead LWS	8	0.87km southwest	The main habitat is a large reedbed, the largest <i>Phragmites</i>

Site Name	Designation	Size (ha)	Distance and orientation from Site	Description
				bed in Gateshead. There are also pools and tree planted areas. The wildlife assemblage includes, of particular importance, otter and kingfisher <i>Alcedo atthis</i> (Schedule 1 species, WCA 1981).
Hagg Wood / Gill and Mitcheson's Gill	Gateshead LWS	5	0.9km southwest	The site supports semi-natural woodland and scrub, supporting breeding birds that include spotted flycatcher <i>Muscicapa striata</i> , hedge sparrow and song thrush. Badger are also regularly present.
Bowes Railway	Gateshead LWS	5	1km south east	A six kilometre linear length of recolonised disused railway line with patches of heathland and acid grassland. There are small areas of linear woodland and a small pond. This site also represents a wildlife corridor crossed by the Scheme.
Birtley Union Brickworks	Gateshead LWS	7.5	1km south	A disused brickwork with a mosaic of wetland and grassland habitats (including marsh). The site also includes several ponds, which are known to support breeding great crested newt. Much of the southern part of the site has been damaged by infill activities from the adjacent active brickworks, however, the central areas retain considerable wildlife value.
Team Colliery	Gateshead LWS	7	1km east	Supports a particularly good example of species-rich early successional open mosaic habitats. Particularly notable for their orchid population.
Long Acre Dene	Gateshead LWS	2	1.1km south east	An area of ancient semi-natural woodland in the valley of the River Team. The site is noted for its bird assemblage, including breeding hedge sparrow and song thrush, and frequent presence of hedgehog.
Bowes Valley Nature Reserve	Gateshead LWS	31	1.2km southwest	Most of the site consists of grasslands, sown with wild-flower mixes, which have established quite successfully and support butterfly populations of importance

Site Name	Designation	Size (ha)	Distance and orientation from Site	Description
				(grayling <i>Hipparchia Semele</i> and dingy skipper <i>Erynnis tages</i>). The site contains two ponds that support populations of common amphibians. The breeding bird assemblage contains a variety of birds with little ringed plover <i>Charadrius dubius</i> of particular interest (Schedule 1 species, WCA 1981 (as amended)).
Ravensworth Ponds and Wood	Gateshead LWS	148	1.5km north west	This is one of the largest wildlife sites in Gateshead, conferring added importance as a refuge for wildlife, including badger and red squirrel <i>Sciurus vulgaris</i> . The site includes ancient replanted woodland, broadleaved and coniferous woodland in addition to several ponds. Great crested newts <i>Triturus cristatus</i> have been reported within the ponds. The site is considered ecologically diverse and supports a wide range of wildlife.
River Team Woodlands	Durham LWS	20	1.6km south	An ancient woodland site of mixed deciduous and coniferous woodland, with a diverse ground layer. The rare climbing corydalis <i>Corydalis claviculata</i> occurs within the northeast of the site, which is considered to be of ornithological value.
Dunkirk Farm West	Gateshead LWS	1	1.8km south east	The site includes grazed paddock and a disused wagon way (an extension of the Bowes Railway Line LWS). The site is noted for its breeding hedge sparrow and song thrush, and frequent presence of hedgehog. This site also represents a wildlife corridor crossed by the Scheme.

ANCIENT WOODLAND

- 3.1.3. There is no ancient woodland within the Site. The closest area of ancient woodland is approximately 1.4km to the north-west at Hill Head Wood

3.2. HABITAT SURVEY

OVERVIEW

3.2.1. The following account summarises the findings of the Phase 1 habitat survey. Nine Phase 1 habitat types were identified in the Site. The habitats are mapped on **Figure 1** and are listed in **Table 3-2**, along with areas in hectares (or length in metres for linear features). A description of the dominant and notable species and the composition and management of each habitat is provided below. An indicative species list is provided in **Appendix C**. Target notes are provided in **Appendix D** and photographs in **Appendix E**. Alpha-numeric codes used in this section cross-refer to the JNCC Phase 1 habitat survey classification (JNCC, 2010). The order of the habitat descriptions below reflects their ordering in the Phase 1 habitat survey manual and does not reflect habitat importance.

Table 3-2 – Phase 1 Habitat Types

Phase 1 Habitat	Area (ha)	Length (m)	% of Site Area
A2.2: Scattered Scrub	0.06		1
A3.1: Scattered Broadleaf Trees	0.2		3
B6: Poor Semi-Improved Grassland	5.2		87
C3.1: Tall Ruderal	0.3		6
G1.3: Standing Water - Oligotrophic	0.2		3
J2.1.2: Intact Hedge – Species Poor		160	
J2.4: Fence		1200	
J2.5: Wall		165	
J3.6: Buildings	0.003		0
TOTAL	5.963	1525	100

A2.2: SCATTERED SCRUB

3.2.2. Small patches of hawthorn *Crataegus monogyna* were present on the northern and southern boundaries of the Site, with frequent bramble *Rubus fruticosus*, frequent dog rose *Rosa canina* and rare common broom *Cytisus scoparius* also present along the southern boundary.

A3.1 SCATTERED BROADLEAVED TREES

3.2.3. Scattered broadleaved trees were present on the eastern and southern boundary of the Site. Trees included dominant poplar *Populus* spp. (**Photo 4; Appendix E**), which was coated heavily with lichen species, and frequent silver birch *Betula pendula*.

B6: POOR SEMI-IMPROVED GRASSLAND

- 3.2.4. The majority of the Site was comprised of two poor-semi improved grassland fields used to graze horses. There was clear evidence of persistent horse grazing and horses were present during the survey. The field undulated resulting in depressions where water gathered. Species included dominant perennial ryegrass *Lolium perenne*, abundant cock's foot *Dactylis glomerata* and frequent creeping bent *Agrostis stolonifera* and creeping buttercup *Ranunculus repens*. Rare occurrences of soft rush *Juncus effusus* were also present (**TN7, Figure 1**).

C3.1: TALL RUDERAL

- 3.2.5. A large linear patch of tall ruderal existed on a steep verge along the southern boundary of the Site. This patch included frequent willowherb *Epilobium* sp. and male fern *Dryopteris filix-mas* and rare occurrences of common knapweed *Centaurea nigra*.

G1.3: STANDING WATER – OLIGOTROPHIC

- 3.2.6. Six ephemeral water bodies were identified during the survey. Vegetation present was identical to that identified within the poor semi-improved grassland on the Site (**Photo 2; Appendix E**). This included occasional common dock *Rumex obtusifolius* and occasional creeping buttercup and perennial ryegrass.
- 3.2.7. The largest areas of water, located at the northern and western boundary of the Site, appeared to have persisted for some time as they were found to be deeper than the rest of the waterbodies found on Site. Additionally, there was a drainage pipe that connected these two waterbodies (**TN3 & 4, Figure 1**). Further, a culvert going under Lamesley Road was present at the most westerly area of water, which connects the two largest waterbodies on Site to land connected with the River Team Extension LWS (**TN2; Figure 1, Photo 1; Appendix E**).

J2.1.2: INTACT HEDGE – SPECIES POOR

- 3.2.8. A hedgerow consisting entirely of hawthorn separated the two poor semi-improved grassland fields. The hedgerow connected to the northern boundary of the Site along the fence line and to the southern boundary of the Site along the verge (**Photo 3; Appendix E**).

J2.4: FENCE

- 3.2.9. Boundary fencing existed around all boundaries of the Site, comprised of barbed wire fencing and tall steel fencing separating the Site from the railway line to the east.

J2.5: WALL

- 3.2.10. Stone walls exist along the western boundary of the Site to isolate the Site from the road and residential housing directly adjacent.

J3.6 BUILDINGS

- 3.2.11. Three buildings were identified within the Site; two small timber stables with pitched roofs (**TN1, Figure 1**) and a large metal container with a flat roof (**TN6, Figure 1**), currently serving as a third shelter for horses that reside on Site.

3.3. PROTECTED AND NOTABLE SPECIES ASSESSMENT

3.3.1. The potential for the Site to support legally protected species and notable species has been assessed using the results of the desk study and observations made during the site survey of habitats within and immediately surrounding the Site. A summary of desk study information is included within **Appendix B**, extracted from **Appendix 8.1: Preliminary Ecological Appraisal, Volume 3** of the ES (**Application Document Reference: TR10031/APP/6.3**). Desk study records have only been considered below if they were recent (from the last 10 years) and/or if they relate to species that may be supported by habitats at the Site. Habitats present within the Site are suitable for the following species; further consideration is given below to the likelihood for these species to be present within the Site:

- Amphibians
- Bats
- Badger
- Birds
- Reptiles
- Brown Hare
- Hedgehog

3.3.2. The Site does not provide suitable habitat for other protected or notable species. As such, other species, beyond those listed above, will not be considered further in this PEA.

AMPHIBIANS

3.3.3. The biological records obtained from ERIC North East included records for common toad *Bufo bufo*, palmate newt *Lissotriton helveticus*, common frog *Rana temporaria* and great crested newt within 2km of the Site. The great crested newt records were all over 600m distance from the Scheme Footprint and therefore, not considered to reflect populations likely to be impacted by the Scheme. As potential impacts to populations are only considered up to 500m from any give Site (English Nature, 2001). Additionally, there is no hydrological connection of the Site to ponds with great crested newt suitability.

3.3.4. The six ephemeral waterbodies identified on Site were subject to HSI assessments, all of which indicated Poor suitability for great crested newts (**Appendix F**). This was generally due to the ephemeral nature of the waterbodies, their lack of connectivity to waterbodies in the surrounding area and the lack of appropriate vegetation. There were no other waterbodies suitable for great crested newts within 500m of the Site.

3.3.5. Suitable terrestrial habitat for amphibians was recorded, including areas of scrub, grassland and linear features such as hedgerows. However, due to the absence of suitable aquatic habitat, amphibians are considered likely to be absent.

BATS

3.3.6. The biological records included the presence of common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, noctule *Nyctalus noctula*, unconfirmed *Pipistrellus* species and unconfirmed bat species. Of the thirty-two bat records returned, only a single roost record was present; a small common pipistrelle roost that was destroyed under licence in 2013 (over 1.5km from the Site).

- 3.3.7. The Site contained two wooden stables, one of which was found to have a bat box installed at the northern gable end (**TN1, Figure 1**). There were also two residential buildings directly adjacent to the west of the Site. All structures were considered to offer potential suitability for roosting bats.
- 3.3.8. The Site was considered to offer foraging and commuting value for bats in relation to the boundary features (scattered broadleaved trees) and hedgerow within the Site. These linear habitats provided connectivity to suitable habitats within the wider area that offer higher suitability for bat activity.

BADGER

- 3.3.9. The biological records returned two badger records within 2km of the Site, both located over 500m.
- 3.3.10. The Site does not hold suitable habitat for badger sett creation, with the exception of the hedgerow and scattered trees to the east. However, no setts were recorded during the survey.
- 3.3.11. The Site provides suitable foraging habitat for badgers, in relation to the poor semi-improved grassland, although there were no signs of badger activity recorded during the survey; such as prints, latrines, guard hairs or feeding scrapes. The wall along the western boundary of the Site acts as a barrier to badger movement, although the post and wire fences along other boundaries are not considered barriers.

BIRDS

- 3.3.12. The biological records included a large number of bird records (7528 in total) within 2km of the Scheme Footprint⁶. The records included fourteen Schedule 1 (WCA 1981 (as amended)) species, although the habitats within the Site are not suitable to support these species. However, habitats within the Site do have suitability to support other notable species. Breeding waders such as Lapwing *Vanellus vanellus*, Curlew *Numenius arquata*, Snipe *Gallinago gallinago* and Redshank *Tringa totanus* are listed on the Lamesley Meadows LWS citation, which is located less than 100m to the south-west of the Site. The ephemeral waterbodies and grassland habitat of the Site are suitable to support these bird species.
- 3.3.13. Habitats identified within the Site; including trees, hedgerow and scrub; were suitable for supporting other breeding birds. There was also suitable habitat recorded for foraging wintering birds, such as the poor semi-improved grassland.

REPTILES

- 3.3.14. There were no records of reptiles within 2km of the Site. Scattered scrub and dense bramble were present at the Site boundaries, providing potential shelter for reptiles. However, no reptiles were recorded during a survey of land approximately 150m to the north in 2017 (**Appendix 8.8: Reptile Survey Report, Volume 3** of the ES [APP-130]). As such, reptiles are considered to be absent from the site.

⁶ Due to the large number of records, these have not been interrogated with respect to records within 2km of the Site.

BROWN HARE

- 3.3.15. There were nine records of brown hare within the data search, with the majority located over 1km to the southwest near Kibblesworth (closest records).
- 3.3.16. The poor semi-improved grassland fields, hedgerows and areas of scrub within the Site provide suitable foraging habitat for brown hare. However, the Site is open and does not provide shelter, likely decreasing the suitability for brown hare to be present. The roads to the west and south of the Site act as partial barriers, as do the boundary fences.

HEDGEHOG

- 3.3.17. The desk study returned thirty-six records of hedgehog within 2km of the Site. Of these records, only eight contained an accurate grid reference (above four digits). The data search confirmed the presence of hedgehog within 100m north east of the Site (at Junction 67 of the A1), with records largely obtained in or near urban areas.
- 3.3.18. The Site included grassland and scrub, suitable to support foraging and sheltering hedgehog.

4. DISCUSSION AND RECOMMENDATIONS

- 4.1.1. This section considers the potential for impacts to designated sites, legally protected species, notable species and notable habitats as a consequence of the Scheme construction and operation with respect to the Site.
- 4.1.2. Where further surveys or detailed assessment of potential impacts are required in order to design suitable mitigation, this is identified. A full impact assessment will be detailed within a separate addendum impact assessment report to verify the impact assessment and mitigation presented in **Chapter 8: Biodiversity** of the ES.

4.1. NON-STATUTORY DESIGNATED SITES

- 4.1.1. Lamesley Meadows LWS is located within close proximity (less than 100m) to the Site. Also, the River Team Extension LWS is located less than 200m to the west of the Site and is connected via the culvert identified during the survey.
- 4.1.2. There will be no direct loss of habitat within either of the LWS designations. However, there is the potential for indirect effects by way of the hydrological connection.

4.2. HABITATS

- 4.2.1. None of the habitats recorded within the Site are afforded legal protection, although are considered of ecological value. Hedgerows are identified as HPI in accordance with Section 41 of the NERC Act 2006. Under Section 40 of this legislation, every public body (including planning authorities) must, '*in exercising its functions, have regard so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity*'.
- 4.2.2. The Scheme may result in the loss and/or damage of this habitat type. Whilst the hedgerow identified within the Site was species-poor and would not qualify as important under the Hedgerows Regulations, as a HPI, compensatory habitat should be provided.

4.3. PROTECTED AND NOTABLE SPECIES

- 4.3.1. The results of the desk study, Phase 1 habitat Survey and protected species assessment highlighted the potential presence of protected species or species of conservation concern within the Site, or within the immediate surroundings of the Site. These include amphibians, bats, birds, badger, reptiles, brown hare and hedgehog. The legal protection afforded to these species is outlined below and, where appropriate, the requirement for further survey is identified.

AMPHIBIANS

- 4.3.2. Great crested newts are protected from killing, injury and disturbance⁷ and their places of rest or shelter (occupied habitat) protected from damage or destruction under the Habitats Regulations.

⁷ Disturbance is defined within the Habitats Regulations as that which is likely to impair a species ability to survive, breed or reproduce, hibernate or migrate or to significantly affect the local distribution or abundance of the species.

Protection is also afforded under the WCA 1981 (as amended) with respect to disturbance of individuals occupying places of rest or shelter and obstruction of access to these. Activities that would otherwise constitute an offence under this legislation may be licensed by Natural England for certain purposes.

- 4.3.3. Great crested newt and common toad are also listed as SPI in accordance with Section 41 of the NERC Act 2006. Public bodies have an obligation under Section 40 to have regard for these species when carrying out their functions.
- 4.3.4. The waterbodies present on Site were considered unlikely to support amphibians due to their ephemeral nature. In addition, there were no suitable waterbodies within 500m of the Site. As such, no further survey is recommended.

BATS

- 4.3.5. All species of bats recorded within the UK are protected from killing, injury and disturbance⁸ and their roosts protected from damage or destruction under the Habitats Regulations. Protection is also afforded under the WCA 1981 (as amended) with respect to disturbance of individuals occupying places of rest or shelter and obstruction of access to these. Activities that would otherwise constitute an offence under this legislation may be licensed by Natural England for certain purposes.
- 4.3.6. Certain species of bats, including the noctule, brown long-eared bat and soprano pipistrelle bat are also listed as SPI for the conservation of biodiversity in England in accordance with Section 41 of the NERC 2006. Section 40 obliges public bodies (including local planning authorities) to have regard for the conservation of biodiversity (including SPI) when discharging their duties (including determining planning applications).
- 4.3.7. The stables identified on the Site hold potential roosting value for bats and may be disturbed by construction activities. As such, it is recommended that the stables are subject to a Preliminary Bat Roost Assessment (PBRA), to determine their suitability for roosting bats. Further details are presented in **Table 4-1**.
- 4.3.8. Loss of the hedgerow (approximately 150m in length) within the Site would result in the loss of foraging/commuting habitat for bats. However, as the hedgerow is only connected to linear habitat features at its southern end and is separated from suitable foraging/commuting habitat along the eastern boundary of the Site by at least 40m, fragmentation is not anticipated. As such, further survey in relation to bat foraging/commuting activity is not required.

BADGER

- 4.3.9. The Protection of Badgers Act 1992 makes it illegal to wilfully kill, injure or take any badger, or attempt to do so. It also makes it an offence to intentionally or recklessly damage, destroy or obstruct access to any part of a badger sett. Activities that would otherwise constitute an offence under this legislation may be licensed by Natural England for certain purposes.

⁸ Disturbance is defined within the Habitats Regulations as that which is likely to impair a species ability to survive, breed or reproduce, hibernate or migrate or to significantly affect the local distribution or abundance of the species.

- 4.3.10. There were no signs of badger or their setts on Site during the walkover survey. In addition, badgers were not recorded within the wider Scheme Footprint during surveys in 2018, as detailed in **Chapter 8: Biodiversity**. Therefore, no further survey is required.

BIRDS

- 4.3.11. The Habitats Regulations Part 1 Regulation 10(2) & (3) state that local authorities '*must take such steps in the exercise of their functions as they consider appropriate to contribute to...the preservation, maintenance and re-establishment of a sufficient diversity and area of habitat for wild birds in the UK including by means of the upkeep, management and creation of such habitat...*'. The legislation continues to state that economic and recreation requirements must be taken into consideration in considering which measures are appropriate.
- 4.3.12. Under the WCA 1981 (as amended) all wild birds are protected from killing and injury, and their nests and eggs protected from taking, damage and destruction whilst in use. Additional protection is extended to species listed under Schedule 1 of the Act, meaning it is also an offence to disturb these species at or near the nest, or whilst they have dependent young.
- 4.3.13. The loss of habitat within the Site would result in the loss of foraging and nesting habitat for wintering and breeding bird populations within the wider area. Further survey is recommended to identify the importance of the Site with respect to breeding and wintering birds, as detailed in **Table 4-1**. The findings of these surveys will be used to verify the mitigation documented in **Chapter 8: Biodiversity** of the ES.

REPTILES

- 4.3.14. Native widespread reptile species (common or viviparous lizard *Zootoca vivipara*, adder *Vipera berus*, grass snake *Natrix natrix* and slow worm *Anguis fragilis*) are partially protected under Schedule 5 of the WCA 1981 (as amended). This includes protection from killing and injury.
- 4.3.15. All reptile species are also listed as SPI in accordance with Section 41 of the NERC Act 2006. Public bodies have an obligation under Section 40 to have regard for these species when carrying out their functions.
- 4.3.16. As reptiles are considered to be absent (based on the 2017 survey), no further survey is required.

BROWN HARE AND HEDGEHOG

- 4.3.17. Both brown hare and hedgehog are SPI in accordance with Section 41 of the NERC Act 2006. Public bodies have an obligation under Section 40 to have regard for these species when carrying out their functions.
- 4.3.18. Both species have undergone significant decline due to habitat loss and fragmentation. The Site has the potential to support both species (less so for brown hare). Targeted surveys are not considered necessary in order to inform ecological impact assessment.

Table 4-1 - Key Ecological Constraints and Further Survey Requirements

Ecological Receptor	Potential Constraints	Further Survey Requirements	Seasonal Constraints
Bats	Disturbance to buildings that have potential roosting suitability for bats.	A PBRA to assess the suitability of the stables present on Site and residential housing immediately adjacent for roosting bats. The PBRA survey should be undertaken in accordance with good practice guidelines (Collins, 2016).	PBRA can be undertaken at any time of the year.
Birds	<p>Loss of bird nesting habitat and habitats (including trees and hedgerow).</p> <p>Disturbance to and loss of migratory and wintering bird habitat.</p>	<p>Breeding bird surveys (BBS) to establish bird populations within one section of the Site (the grassland field).</p> <p>Wintering bird surveys (currently ongoing) to establish presence and usage of the Site during these times and therefore potential impacts of the Scheme. The survey work followed a standard method based on the British Trust for Ornithology's (BTO's) Common Bird Census (CBC), as summarised by Bibby et al. (2000).</p>	<p>BBS can be conducted between the period March and August.</p> <p>Wintering bird surveys can be conducted between October and March.</p>

5. CONCLUSIONS

- 5.1.1. A range of habitats were recorded within the Site, including poor semi-improved grassland (grazed pasture), scattered trees, scattered scrub, standing water and boundary features (including hedgerows, fences and tree lines). The habitats present both within and adjacent to the Site were suitable to support roosting, foraging and commuting bats and breeding and wintering birds. Lamesley Meadows LWS and the River Team Extension LWS are located within 200m of the Site and hydrologically linked via a culvert beneath Lamesley Road.
- 5.1.2. To ensure compliance with legislation and planning policy and to inform an ecological impact assessment, further survey effort is recommended in relation to roosting bats, breeding birds and wintering birds, with the latter already underway. These surveys are outlined in **Table 4-1** and the findings will be presented in separate reports.
- 5.1.3. The construction and operational impacts of the Scheme with respect to the Site will be fully assessed and presented within an addendum report to the ES, which will also verify the suitability of proposed mitigation and compensation detailed in **Chapter 8: Biodiversity**.

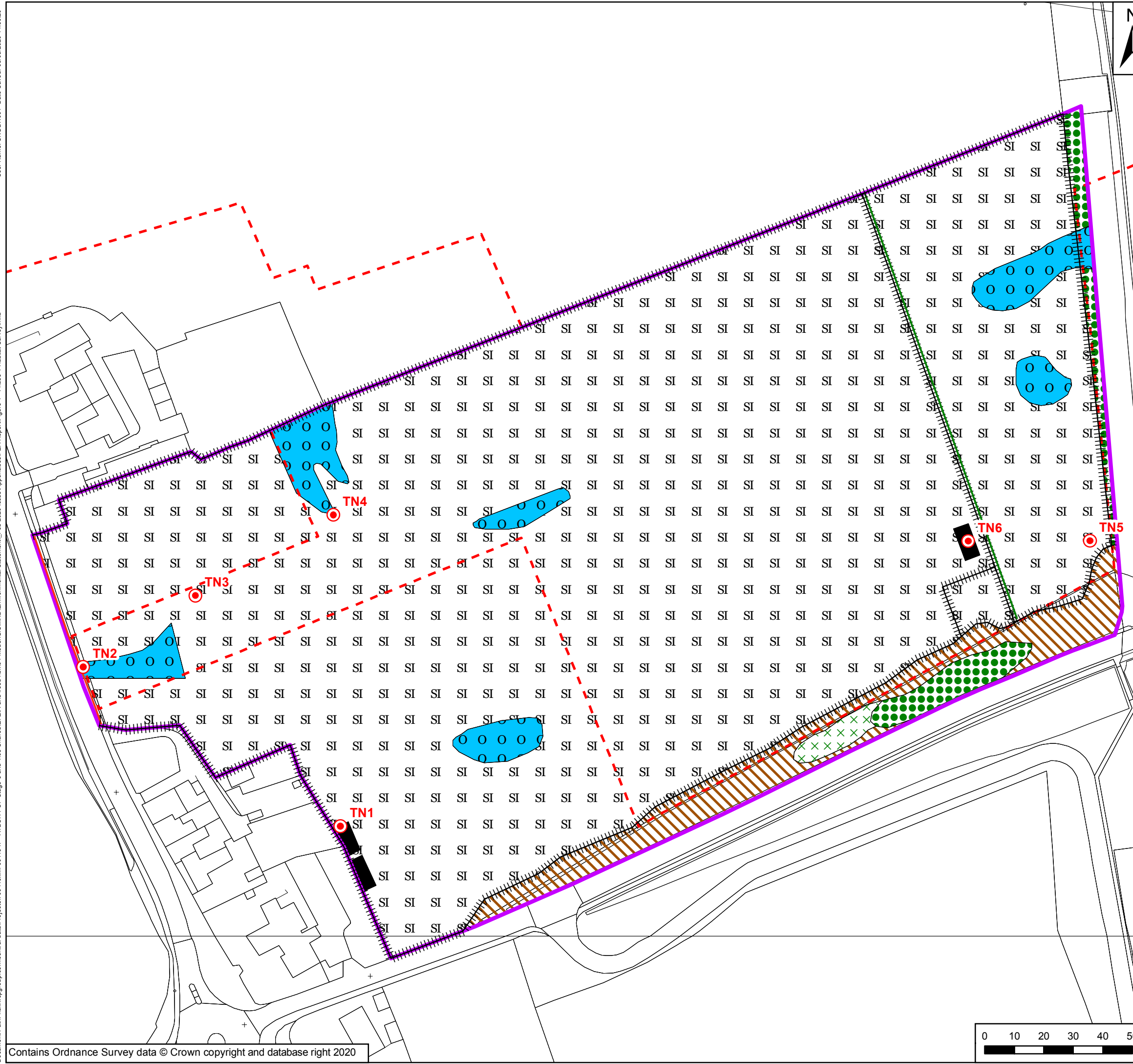
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FIGURES

Figure 1 - Phase 1 Habitat Survey

User Name: UKGDH001 Date Saved: 06/03/2020 14:50:20
 Document Path: \\uk.wsgroup.com\central\data\Projects\700419x\70041947 - A1BCH PCF Stage 3 and 4\03 Shared\EI EIA and flood risk\01 Model\GIS\MXD\Environmental Statement\Feb 2020 Issue\Appendices\PEA Report\Figure 1 - Phase 1 Habitat Survey.mxd



- Key**
- Survey Area
 - Scheme Footprint
 - Broadleaved Parkland/Scattered Trees
 - Buildings
 - Other Tall Herb and Fern - Ruderal
 - Poor Semi-Improved Grassland
 - Scrub - Scattered
 - Standing Water - Oligotrophic
 - Fence
 - Intact Hedge - Species-Poor
 - Wall
 - Target Note

P01	Mar 2020	First Issue	GH	JF	NJA		
Rev	Date	Description	By	Chk'd	App'd		
Suitability						Status	

PINS Reference Number **TR010031**



Project Title **A1 Birtley to Coal House Scheme**

Drawing Title **Figure 1 Phase 1 Habitat Survey**

Scale	1:1,250	Drawn	GH	Checked	JF	Approved	KS	Authorised	NJA
Original Size	A3	Date	Mar 2020	Date	Mar 2020	Date	Mar 2020	Date	Mar 2020
Drawing Number	HE551462	Originator	WSP	Volume	6.2	Revision	P01		
PW Stage Code									

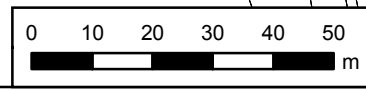
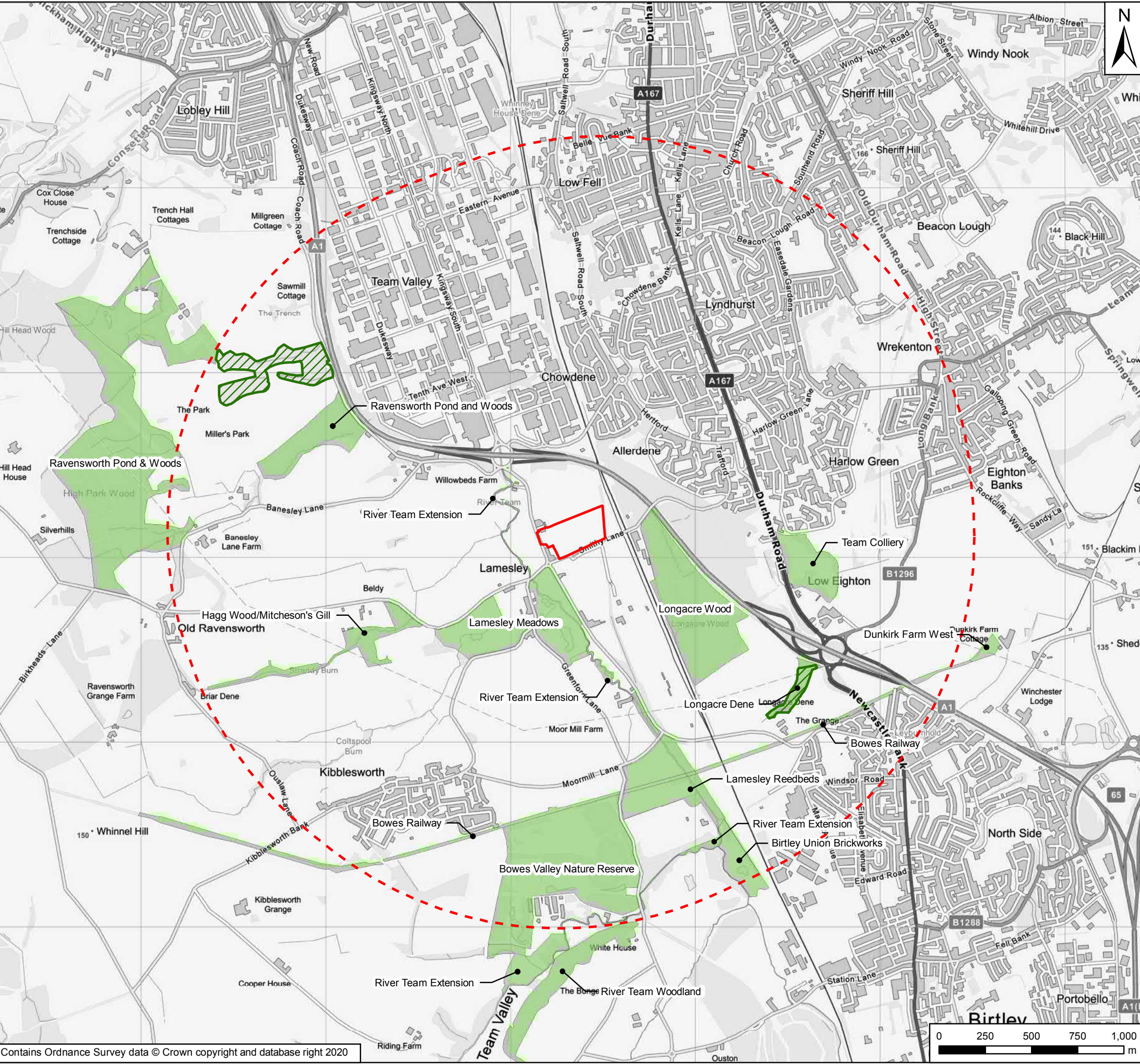


Figure 2 – Non-statutory sites within 2km

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 Document Path: \\uk.wspgroup.com\central\data\Projects\700419\A1\BCH\PCF Stage 3 and 4\03 Shared\EIA and flood risk\01 Model\GIS\MXD\Environmental Statement\Feb 2020 Issue\Appendices\PEA Report\Figure 2 - Non-Statutory Sites.mxd



Key

- Survey Area
- 2km Study Area
- Ancient Woodland
- Local Wildlife Sites

P01	Mar 2020	First Issue	GH	JF	NJA
Rev	Date	Description	By	Chk'd	App'd
Suitability					Status

PINS Reference Number: TR010031



Project Title: A1 Birtley to Coal House Scheme

Drawing Title: Figure 2 Non-Statutory Designated Sites within 2km

Scale: 1:20,000	Drawn: GH	Checked: JF	Approved: KS	Authorised: NJA
Original Size: A3	Date: Mar 2020	Date: Mar 2020	Date: Mar 2020	Date: Mar 2020

Drawing Number: HE551462	Originator: WSP	Volume: 6.2	Revision: P01
PW Stage Code			

B2CH	Section	Type	ID	Direction	Type	Role	Number
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Appendix A

RELEVANT LEGISLATION AND --- PLANNING POLICY

ENGLAND & WALES LEGISLATION AND POLICY CONTEXT

This report has been compiled with reference to relevant wildlife legislation, planning policy and the UK Biodiversity Framework. An overview and context of relevant legislation is provided, with the relevant protection each species group or species receives summarised in **Table A:1**.

The Wildlife and Countryside Act 1981, (as amended) (WCA)

Protected birds, animals and plants are listed under Schedules 1, 5, 8 and 9 respectively of the WCA, a description of these Schedules and their meaning is provided below.

Under the WCA (England and Wales) all birds, their nests and eggs (with exception of species listed under Schedule 2) are protected by the WCA. It is an offence to:

- Intentionally kill, injure, or take any wild bird,
- Take or destroy an egg of any wild bird.
- Damage or destroy the nest of any wild bird (whilst being built, or in use). Under the WCA the clearance of vegetation within the Site boundary, or immediately adjacent to the Site during the bird nesting season could result in an offence occurring by the disruption or destruction of nest sites. The bird breeding season can be taken to occur between March - August inclusive, although is subject to variations based on species, geographical and seasonal factors.

Schedule 1

Birds listed under Schedule 1 of the WCA⁹ are afforded additional protection with regard to intentional or reckless disturbance whilst nest-building, or at a nest containing eggs or young, or disturb the dependent young of such a bird.

Schedule 5

Species listed in Schedule 5 can either be fully protected or be partially protected under Section 9, which makes it unlawful to intentionally:

- Part 1: kill, injure or take;
- Part 2: possess or control (live or dead animal, part or derivative);
- Part 4 (a): damage or destruct any structure used for shelter or protection;
- Part 4 (b): disturb them in a place of shelter or protection;
- Part 4 (c): obstruct access to place of shelter or protection;
- Part 5 (a): sell, offer for sale, possess or transport for the purpose of sale (live or dead animal, part or derivative);
- Part 5 (b): advertise for buying or selling.

Schedule 8

The Act makes it an offence (subject to exceptions) to pick, uproot, trade in, or possess (for the purposes of trade) any wild plant listed in Schedule 8, and prohibits the unauthorised intentional uprooting of such plants.

Schedule 9

Invasive species listed under Schedule 9 are prohibited from release into the wild and the Act prohibits planting or “causing to grow” in the wild of any plant species listed in Schedule 9. It should be noted that certain bird species listed on Schedule 1 of the WCA are also listed on Schedule 9 to prevent release of non-native and captive individuals, this includes barn owl, red kite, goshawk and corncrake.

Countryside Rights of Way Act 2000 (CRoW Act)

The CRoW Act has amended the WCA in England and Wales strengthening the protection afforded to Sites of Special Scientific Interest (SSSI) and the legal protection for threatened species. It adds the word ‘reckless’ to the wording of the offences listed under Section 9(4) of the WCA. This alteration makes it an offence to recklessly commit an offence, where previously an offence had to be intentional to result in a breach of legislation.

⁹ To view the current list of Schedule 1 listed birds visit: <http://www.legislation.gov.uk/ukpga/1981/69/schedule/1> [Accessed 15/02/2020].

Natural Environment and Rural Communities (NERC) Act 2006

Species and Habitats of Principal Importance in England and Wales are listed under Section 41 and Section 42 respectively of the NERC Act. The Section 41 and 42 lists detail species that are of principal importance for the conservation of biodiversity in England and Wales, and should be used to guide decision-makers such as local and regional authorities when implementing their duty to have regard for the conservation of biodiversity in the exercise of their normal functions – as required under Section 40 of the NERC Act 2006. **The Protection of Badgers Act (1992)**

It is an offence to wilfully take, kill, injure, possess or ill-treat a badger. Under the Act their setts are protected against intentional or reckless interference. Sett interference includes damaging or destroying a sett, obstructing access to any part of the sett, or disturbance of a badger whilst it is occupying a sett. The Act defines a badger sett as 'any structure or place, which displays signs indicating the current use by a badger' and Natural England (NE) takes this definition to include seasonally used setts that are not occupied but that show sign of recent use by badgers (Natural England, 2009¹⁰).

If impacts to badgers or their setts are unavoidable then authorised sett disturbance requires a licence.

The UK Post-2010 Biodiversity Framework (2011-2020) (JNCC and DEFRA, 2012)

This Framework lists the UK's most threatened species and habitats and sets out targets and objectives for their management and recovery. The UK Biodiversity Action Plan (BAP) process is delivered nationally, regionally and locally and should be used as a guide for decision-makers to have regards for the targets set by the framework and the goals they aim to achieve. The UK BAP has now been replaced by the UK Post-2010 Biodiversity Framework, however, it contains useful information on how to characterise important species assemblages and habitats which is still relevant (UK Post-2010 Biodiversity Framework, 2012¹¹).

The Conservation of Habitats and Species Regulations 2017 (as amended)

The Conservation of Habitats and Species Regulations 2017 (as amended) consolidate the Conservation of Habitats and Species Regulations 2010 with subsequent amendments. The Regulations transpose Council Directive 92/43/EEC, on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive), into national law. They also transpose elements of the EU Wild Birds Directive in England and Wales. The Regulations came into force on 30th November 2017, and extend to England and Wales (including the adjacent territorial sea) and to a limited extent in Scotland (reserved matters) and Northern Ireland (excepted matters). In Scotland, the Habitats Directive is transposed through a combination of the Habitats Regulations 2010 (in relation to reserved matters) and the Conservation (Natural Habitats &c.) Regulations 1994. The Conservation (Natural Habitats, &c) Regulations (Northern Ireland) 1995 (as amended) transpose the Habitats Directive in relation to Northern Ireland.

All species listed under Annex IV of the Habitats Directive require strict protection and are known as European Protected Species (EPS). Under Regulation 42 of the Habitats Regulations it is unlawful to:

- Deliberately kill, capture or disturb;
- Deliberately take or destroy the eggs of; and
- Damage or destroy the breeding site/resting place of any species protected under this legislation.

If the Ecologist determines that impacts to an EPS are unavoidable then the works may need to be carried out under a site specific mitigation licence from Natural England (NE) or Natural Resources Wales (NRW). Low Impact Class licences are also available in both England and Wales for bats and great crested newts. This enables Registered Low Impact Consultants to undertake certain low impact activities reducing the EPS application paperwork and process length.

Certain EPS are also listed under Annex II of the Habitats Directive and are afforded protection by the establishment of core areas of habitat known as Special Areas of Conservation. This means these species are a relevant consideration in a Habitats Regulations Assessment (HRA).

The Birds Directive seeks to maintain populations of all wild bird species across their natural range (Article 2). All bird species listed under Annex I¹² of the Birds Directive are rare or vulnerable and afforded protection by the classification of Special Protection Areas (SPAs), these are also designated under all regularly occurring migratory species, with regard to the protection of wetlands of international importance (Article 4). This means these bird species and communities are a relevant consideration in HRA.

¹⁰ Natural England, June 2009, Protection of Badgers Act 1992 (as amended), Guidance on 'Current Use' in the definition of a Badger Sett WMLG17, Natural England, Peterborough.

¹¹ JNCC and Defra (on behalf of the Four Countries' Biodiversity Group), July 2012, UK Post-2010 Biodiversity Framework, Available from: http://jncc.defra.gov.uk/pdf/UK_Post2010_Bio-Fwork.pdf [Accessed 15/02/2020].

¹² To view birds listed under Annex I visit: http://ec.europa.eu/environment/nature/conservation/wildbirds/threatened/index_en.htm [accessed 15/02/2020]

Table A:1: Key Species and National Wildlife Legislation, Policy and Biodiversity Framework Applicable in England & Wales

Species	Legislation, Planning Policy and UK Biodiversity Framework								
	Wildlife and Countryside Act 1981 (as amended), (WCA)				The Conservation of Habitats and Species Regulations 2017 (as amended) (Habitats Regulations) - Regulation 41	Natural Environment and Rural Communities (NERC) Act 2006	The Protection of Badgers Act 1992	The UK Post-2010 Biodiversity Framework 2011-2020 (JNCC and DEFRA, 2012)	
	Schedule 1	Schedule 5	Schedule 8	Schedule 9	European Protected Species (Annex IV of the EC Habitats Directive),				
Badger							Y		
Bats		Y ¹³ (part)			Y ¹⁴	Y ¹⁵			Y ¹⁶
Hazel Dormouse		Y 5(part)			Y	Y			Y
Otter		Y 5(part)			Y	Y			Y
Water vole		Y ¹⁷ (full)				Y			Y
Birds	Y			Y ¹⁸		Y ¹⁹			Y ²⁰

¹³ These species are partially protected under section 9(4)(b), (4)(c) and (5).

¹⁴ Only Barbastelle (*Barbastella barbastellus*), Bechstein's bat (*Myotis bechsteinii*), greater horseshoe bat (*Rhinolophus ferrumequinum*) and lesser horseshoe bat (*Rhinolophus hipposideros*) are listed on Annex II of the Habitats Directive.

¹⁵ Greater horseshoe bat, lesser horseshoe bat, Bechstein's bat, noctule (*Nyctalus noctula*), soprano pipistrelle (*Pipistrellus pygmaeus*), brown long-eared bat (*Plecotus auritus*) and barbastelle are listed as Species of Principal Importance in England with the addition of common pipistrelle (*Pipistrellus pipistrellus*) in Wales listed under

Section 7 of the Environment (Wales) Act (2016) <http://www.legislation.gov.uk/ukpga/2006/16/contents>.

¹⁶ Barbastelle bat, Bechstein's bat, noctule, soprano pipistrelle, brown long-eared bat, greater horseshoe bat, lesser horseshoe bat are listed as UK BAP species of bat.

¹⁷ Class Licences are available to Registered Consultants to intentionally disturb, damage or destroy water vole burrows or to displace water voles from their burrows in relation to a development proposal where the licensed action provides a conservation benefit for water voles. Certain displacement operations may be carried out under a Class licence by a registered person in England, however in Wales all displacement operations must be carried out under a site specific licence.

¹⁸ To view plants and animals listed on Schedule 9 Part 1 visit <http://www.legislation.gov.uk/ukpga/1981/69/schedule/9> [accessed 6 April 2017]

¹⁹ There are 49 species of birds listed as Species of Principal Importance in England in Section 41 of the NERC Act 2006 and 51 species in Wales under Section 7 of the Environment (Wales) Act (2016) <http://www.legislation.gov.uk/ukpga/2006/16/contents>.

²⁰ To view the current list of UK BAP priority birds visit: <http://jncc.defra.gov.uk/page-5163> [Accessed 15/02/2020].

Reptiles	Y ^{21(part)}		Y ⁹	Y ²²	Y ²³	Y ²⁴
Amphibians	Y ^{25(part)}		Y ²⁶	Y ^{27, 28}	Y ²⁹	
White-clawed Crayfish	Y ^{30(partial)}			Y ³¹	Y	Y
Invertebrates	Y ^{32(full/part)}		Y	Y ^{33, 34}	Y ³⁵	Y ³⁶

²¹ The four common reptile species, Adder (*Vipera berus*), Grass snake (*Natrix natrix*), Common lizard (*Zootoca vivipara*) and Slow worm (*Anguis fragilis*) are offered partial protection under section 9(5). The rarer UK reptile species (Smooth snake (*Coronella austriaca*) and Sand lizard (*Lacerta agilis*)) are partially protected under section 9(4)(b) and (c) and (5).

²² Smooth snake (*Coronella austriaca*) and Sand lizard (*Lacerta agilis*) are the only reptiles to be designated as European Protected Species.

²³ All 6 reptile species are listed as Species of Principal Importance in England listed under Section 41 of the NERC Act 2006 and 5 species, excluding smooth snake, listed under Section 7 of the Environment (Wales) Act (2016) <http://www.legislation.gov.uk/ukpga/2006/16/contents>.

²⁴ To view the current list of UK BAP priority herptile species visit: <http://jncc.defra.gov.uk/page-5166> [Accessed 15/02/2020].

²⁵ The four common reptile species, Adder (*Vipera berus*), Grass snake (*Natrix natrix*), Common lizard (*Zootoca vivipara*) and Slow worm (*Anguis fragilis*) are offered partial protection under section 9(5). The rarer UK reptile species (Smooth snake (*Coronella austriaca*) and Sand lizard (*Lacerta agilis*)) are partially protected under section 9(4)(b) and (c) and (5).

²⁶ Common frog (*Rana temporaria*), Common toad (*Bufo bufo*), Smooth newt (*Lissotriton vulgaris*) and Palmate newt (*Lissotriton helveticus*) are offered partial protection under section 9(5). Great crested newt (*Triturus cristatus*) and Natterjack toad (*Epidalea calamita*) are offered partial protection under section 9(4)(b) and (c) and (5). Pool frog (*Pelophylax lessonae*) is offered partial protection under section 9(4)(b) and (c)(1) only and with respect to England only.

²⁷ Great crested newt, Natterjack toad and Pool frog are the only amphibians to be designated European Protected Species.

²⁸ Great crested newt is the only amphibian listed on Annex II of the Habitats Directive.

²⁹ Great crested newt, Natterjack toad and Common toad are listed as Species of Principal Importance in England in Section 41 of the NERC Act 2006 <http://www.legislation.gov.uk/ukpga/2006/16/contents>.

³⁰ Under the Wildlife and Countryside Act it is illegal to take or sell white clawed crayfish under the WCA. A licence is required to survey (hand net or trap) for the species. To undertake work within WCC inhabited rivers a Class Licence maybe issued by the relevant authority to move WCC away from harm prior to works. Although WCC are not protected from killing or injury Natural England state in their Class licence that due to declining numbers all efforts should be made to conserve the species.

³¹ White clawed crayfish are listed under Annex II and V of the Habitats Directive.

³² To view the current list of invertebrates that are protected under this Act either in part or full visit: <http://www.legislation.gov.uk/ukpga/1981/69/schedule/5> [Accessed 15/02/2020].

³³ The Large blue butterfly (*Maculinea arion*), Fisher's estuarine moth (*Gortyna borelii lunata*) and Lesser whirlpool ram's-horn snail (*Anisus vorticulus*) are the only invertebrates to be designated European Protected Species.

³⁴ There are currently twelve invertebrates listed in Annex II of the Habitats Directive; White-clawed crayfish (*Austroptamobius pallipes*), Southern damselfly (*Coenagrion mercuriale*), Marsh fritillary butterfly (*Eurodryas aurinia*), Violet click beetle (*Limoniscus violaceus*), Stag beetle (*Lucanus cervus*), Freshwater pearl mussel (*Margaritifera margaritifera*), Narrow-mouthed whorl snail (*Vertigo angustior*), Round-mouthed whorl snail (*Vertigo genesii*), Geyer's whorl snail (*Vertigo geyeri*), Desmoulin's whorl snail (*Vertigo moulinsiana*), Lesser whirlpool ram's-horn snail (*Anisus vorticulus*) and Fisher's estuarine moth (*Gortyna borelii lunata*).

³⁵ There are currently 379 invertebrate species (not including marine species) listed as Species of Principal Importance in England http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=4&ved=0ahUKEwivvu7J9trSAhXiCsAKHX4TBGcQFggvMAM&url=http%3A%2F%2Fpublications.naturalengland.org.uk%2Ffile%2F6518755878240256&usq=AFQjCNEpiUWYuOghVcfSDvi_3iK2TJytfQ listed under Section 41 of the NERC Act 2006 [Accessed 15/02/2020]

³⁶ To view the current list of UK BAP priority invertebrates visit: <http://jncc.defra.gov.uk/page-5169> [Accessed 15/02/2020].

Fish		Y ³⁷ (full/part)		Y9	Y 38, 39	Y ⁴⁰		Y ⁴¹
Plants			Y ⁴²	Y9	Y 43, 44	Y 45		Y 46

³⁷ To view the current list of fish either part or fully protected under the Act visit: <http://www.legislation.gov.uk/ukpga/1981/69/schedule/5> [Accessed 15/02/2020].

³⁸ Sturgeon (*Acipenser sturio*) is the only fish to be designated a European Protected Species.

³⁹ There are eight fish species listed on Annex II of the Habitats Directive. To view the current list visit: <http://jncc.defra.gov.uk/page-1523> [Accessed 15/02/2020].

⁴⁰ There are 35 species of fish listed as Species of Principal Importance in England listed under Section 41 of the NERC Act 2006 and 10 species in Wales listed under Section 7 of the Environment (Wales) Act 2016.

⁴¹ To view the current list of UK BAP priority fish visit: <http://jncc.defra.gov.uk/page-5164> [Accessed 15/02/2020].

⁴² To view the current list of Schedule 8 listed plants visit: <http://www.legislation.gov.uk/ukpga/1981/69/schedule/8> [Accessed 15/02/2020].

⁴³ There are nine plant species designated as European Protected Species. To view the current list visit: <http://www.legislation.gov.uk/ukxi/2010/490/schedule/5/made> [Accessed 15/02/2020].

⁴⁴ To view the current list of plant species on Annex II of the Habitats Directive visit: <http://jncc.defra.gov.uk/page-1523> [Accessed 15/02/2020].

⁴⁵ There are currently 152 vascular plants listed as Species of Principal Importance in England listed under Section 41 of the NERC Act 2006 and 77 species in Wales listed under Section 7 of the Environment (Wales) Act 2016.³¹ To view the current list of UK BAP priority plants visit: <http://jncc.defra.gov.uk/page-5171> and <http://jncc.defra.gov.uk/page-5168> [Accessed 15/02/2020].

⁴⁶ To view the current list of UK BAP priority plants visit: <http://jncc.defra.gov.uk/page-5171> and <http://jncc.defra.gov.uk/page-5168> [Accessed 15/02/2020].

Appendix B

SUMMARY OF ECOLOGICAL DESK

STUDY DATA

Table B.1 - Protected and notable species (excluding birds) for which records have been identified within 2 km of the Site

Species common name	Species Latin name	No. of records	Distance and orientation from Scheme Footprint	Legal / Conservation Status ⁴⁷
Common Toad	<i>Bufo bufo</i>	6	250m south	BAP 2007, Bern A3, England NERC S.41, WACA Sch5 Sect 9.5a
Palmate Newt	<i>Lissotriton helveticus</i>	4	500m north east	Bern A3, WACA Sch5 Sect 9.5a
Smooth Newt	<i>Lissotriton vulgaris</i>	6	500m north east	Bern A3, WACA Sch5 Sect 9.5a
Common Frog	<i>Rana temporaria</i>	6	250m south	Bern A3, HabDir A5, WACA Sch5 Sect 9.5a
Great Crested Newt	<i>Triturus cristatus</i>	14	1.1km south	BAP 2007, Bern A2, Durham BAP, England NERC S.41, FEP 007, HabDir A2, HabDir A4, HabReg Sch2, Northumberland BAP, WACA Sch5 Sect 9.4b, WACA Sch5 Sect 9.5a, WACA Sch5 Sect 9.4c,
Heather	<i>Calluna vulgaris</i>	1	700m north east	RedList GB post 2001 NT ⁴⁸
Harebell	<i>Campanula rotundifolia</i>	1	700m north east	RedList GB post 2001 NT
Scots Pine	<i>Pinus sylvestris</i>	1	800m west	IUCN Nationally Scarce but excluded from Red List
Japanese Knotweed	<i>Reynoutria japonica</i>	7	20m north	WCA 1981 (Sch 9 Sct 14 part 2), EPA 1990

⁴⁷ HabReg = Conservation of Habitats and Species Regulations (2017), HabDir = Habitats Directive (Council Directive 92/43/EEC), WACA = Wildlife and Countryside Act (1981), NERC = Schedule 41 Natural Environment and Rural Communities Act (2006), FEP = Farm Environment Plan Guidance 001, LBAP = Local Biodiversity Action Plan, RD1 (UK) = UK Red Data Book listing based on IUCN guidelines, RD2 (UK) = UK Red Data Book listing not based on IUCN guidelines (Nationally Rare and Scarce).

⁴⁸ NT = Near Threatened

Mat-Grass	<i>Nardus stricta</i>	1	600m north east	RedList GB post2001 NT
Tormentil	<i>Potentilla erecta</i>	1	600m north east	RedList GB post2001 NT
Lesser Spearwort	<i>Ranunculus flammula</i>	1	600m north east	RedList GB post2001 VU ⁴⁹
Goldenrod	<i>Solidago virgaurea</i>	1	600m north east	RedList GB post2001 NT
Large-Leaved Lime	<i>Tilia platyphyllos</i>	1	1.5km east	FEP 001, IUCN Nationally Scarce but excluded from Red List
Cup Lichen	<i>Cladonia</i>	1	500m north	Habitat Directive – A5
Flat-topped Bog-moss	<i>Sphagnum fallax</i>	1	1.3km north	Habitat Directive – A5
European Water Vole	<i>Arvicola amphibius</i>	3	100m north	BAP-2007, Durham BAP
Roe Deer	<i>Capreolus capreolus</i>	11	700 south west	Bern-A3
West European Hedgehog	<i>Erinaceus europaeus</i>	36	150m south west	BAP-2007, Bern-A3, Durham BAP, England NERC S.41, Northumberland BAP
Brown Hare	<i>Lepus europaeus</i>	9	700m south west	BAP 2007, Durham BAP, England NERC S.41, FEP 007 tab2
European Otter	<i>Lutra lutra</i>	26	50m west	BAP-2007, Bern A2, Durham BAP, ECCITES A, England NERC S.41, FEP 007 tab2, HabDir A2, HabDir A4, HabReg Sch2, Northumberland BAP, RedList Global post 2001 NT, WACA Sch5 sect9.4b, WACA Sch5 sect9.5a, WACA Sch5Sect9.4c
Eurasian Badger	<i>Meles meles</i>	2	1.4km south west	Bern A3, Durham BAP, Protection of Badgers Act 1992

⁴⁹ VU = Vulnerable

Stoat	<i>Mustela erminea</i>	5	10m north	Bern A3
Weasel	<i>Mustela nivalis</i>	5	900m south	Bern A3
Feral Ferret	<i>Mustela putorius subsp. furo</i>	1	1.7km south	BAP 2007, Bern A3, Durham BAP, England NERC S.41, HabDir A5, HabReg Sch4
American Mink	<i>Mustela vison</i>	3	700m south west	WACA Sch 9 Part 1
Eurasian Water Shrew	<i>Neomys fodiens</i>	1	1km south	Bern A3, Durham BAP
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	21	1km west	CMS ⁵⁰ A2, CMS EUROBATS-A1, HabReg Sch2, WACA Sch5 sect9.1(kill/injuring), WACA Sch5 sect9.4b, WACA Sch5 sect9.5a, WACA Sch5 Sect9.4c
Soprano Pipistrelle	<i>Pipistrellus pygmaeus</i>	5	1km west	BAP 2007, Bern A2, CMS A2, CMS EUROBATS-A1, Durham BAP, England NERC S.41, HabDir A4, HabReg Sch2, Northumberland BAP, WACA Schsect9.1(kill/injuring), WACA Sch5 sect9.4b, WACA Sch5 sect9.5a, WACA Sch5Sect 9.4c
Noctule Bat	<i>Nyctalus noctula</i>	2	2.2km south	BAP 2007, Bern A2, CMS A2, CMS EUROBATS A1, Durham BAP, England NERC S.41, FEP 007 tab2, HabDir A4, HabReg Sch2, Northumberland BAP, WACA Sch5 sect9.1(kill/injuring), WACA Sch5 sect9.4b, WACA-Sch5 sect9.5a, WACA Sch5 Sect 9.4c
Eastern Grey Squirrel	<i>Sciurus carolinensis</i>	21	300m east	WACA Sch 9 Part 1

⁵⁰ Secretariat of the Convention on Migratory Species

Eurasian Red Squirrel	<i>Sciurus vulgaris</i>	1	1.4km north	BAP 2007, Bern A3, Durham BAP, England NERC S.41, FEP 007 tab2, Northumberland BAP, WACA Sch5 sect9.2, WACA Sch5 sect9.4.a, WACA Sch5 sect9.4b, WACA Sch5 sect9.5a, WACA Sch5 Sect9.4c
Eurasian Common Shrew	<i>Sorex araneus</i>	3	400m north	Bern A3

Table B.2 - Protected and notable birds for which records have been identified within 2 km from the Site

Species common name	Species Latin name	No. of records	Distance and orientation from Scheme Footprint	Legal / Conservation Status 51
Sparrowhawk	<i>Accipiter nisus</i>	70	1.3km south	CMS A2, ECCITES-A
Common Sandpiper	<i>Actitis hypoleucos</i>	6	1.3km south	CMS A2, CMS AEWA ⁵² A2
Skylark	<i>Alauda arvensis</i>	5	1.3km south	BirdsDir A2.2, Durham BAP, England NERC S.41, FEP 007 tab2, Northumberland BAP
King Fisher	<i>Alcedo atthis</i>	29	1.3km south	Bern A2, BirdsDir A1, FEP 007 tab2, WACA Sch1 part1
Teal	<i>Anas crecca</i>	201	1.3km south	Bird Amber, BirdsDir A2.1, CMS A2, CMS AEWA A2, ECCITES C, Northumberland BAP
Wigeon	<i>Anas Penelope</i>	79	1.3km south	Bird-Amber, BirdsDir-A2.1, CMS_A2, CMS_AEWA-A2, ECCITES-C, Northumberland BAP

⁵¹ HabReg = Conservation of Habitats and Species Regulations (2017), W&CA = Wildlife and Countryside Act (1981), NERC = Schedule 41 Natural Environment and Rural Communities Act (2006), LBAP = Local Biodiversity Action Plan, BoCC Red = Birds of Conservation Concern Red List, BoCC Amber = Birds of Conservation Amber List.

⁵² The Agreement on the Conservation of African-Eurasian Migratory Waterbirds

Mallard	<i>Anas platyrhynchos</i>	228	1.3km south	Bird-Amber, BirdsDir-A2.1, CMS_A2, CMS_AEWA-A2
Gadwall	<i>Anas strepera</i>	23	1.3km south	Bird-Amber, BirdsDir-A2.1, CMS_A2, CMS_AEWA-A2
White Fronted Goose	<i>Anser albifrons</i>	2	1.3km south	Bird-Red, BirdsDir-A2.2, CMS_A2, CMS_AEWA-A2
Greylag Goose	<i>Anser anser</i>	200	1.3km south	Bird-Amber, BirdsDir-A2.1, CMS_A2, CMS_AEWA-A2, WACA-Sch1_part2
Pink Footed Goose	<i>Anser brachyrhynchus</i>	24	1.3km south	Bird-Amber, BirdsDir-A2.2, CMS_A2, CMS_AEWA-A2
Meadow Pipit	<i>Anthus pratensis</i>	41	1.3km south	Bern-A2, Bird-Amber
Swift	<i>Apus apus</i>	60	1.3km south	Bird-Amber, Northumberland BAP
Grey Heron	<i>Ardea cinerea</i>	121	1.3km south	CMS_AEWA-A2
Little Owl	<i>Athene noctua</i>	3	1.3km south	Bern-A2, ECCITES-A
Pochard	<i>Aythya farina</i>	3	1.3km south	Bird-Red, BirdsDir-A2.1, CMS_A2, CMS_AEWA-A2
Tufted Duck	<i>Aythya fuligula</i>	4	1.3km south	BirdsDir-A2.1, CMS_A2, CMS_AEWA-A2
Waxwing	<i>Bombycilla garrulous</i>	2	1.3km south	Bern-A2
Canada Goose	<i>Branta Canadensis</i>	46	1.3km south	BirdsDir-A2.1, CMS_A2, WACA Sch 9 Part 1
Goldeneye	<i>Bucephala clangula</i>	1	1.3km south	Bird-Amber, BirdsDir-A2.2, CMS_A2, CMS_AEWA-A2, WACA-Sch1_part2
Buzzard	<i>Buteo buteo</i>	136	1.3km south	CMS_A2, ECCITES-A
Dunlin	<i>Calidris alpina</i>	3	1.3km south	Bird-Amber, Bern-A2, CMS_A2, CMS_AEWA-A2, FEP-007_tab2
Goldfinch	<i>Carduelis carduelis</i>	151	1.3km south	Bern-A2, Northumberland BAP

Greenfinch	<i>Carduelis chloris</i>	56	1.3km south	Bern-A2, Northumberland BAP
Tree Creeper	<i>Certhia familiaris</i>	1	1.3km south	Bern-A2
Little Ringed Plover	<i>Charadrius dubius</i>	41	1.3km south	Bern-A2, CMS_A2, CMS_AEWA-A2, WACA-Sch1_part1
Ringed Plover	<i>Charadrius hiaticula</i>	13	1.3km south	Bern-A2, Bird-Red, CMS_A2, CMS_AEWA-A2, Northumberland BAP
Black Headed Gull	<i>Chroicocephalus ridibundus</i>	205	1.3km south	Bird-Amber, BirdsDir-A2.2, CMS_AEWA-A2,
Dipper	<i>Cinclus cinclus</i>	6	1.3km south	Bern-A2, Bird-Amber
Rock Dove	<i>Columba livia</i>	8	1.3km south	BirdsDir-A2.1, ECCITES-A
Stock Dove	<i>Columba oenas</i>	70	1.3km south	Bird-Amber, BirdsDir-A2.2, Northumberland BAP
Woodpigeon	<i>Columba palumbus</i>	270	1.3km south	BirdsDir-A2.1, Northumberland BAP
Carrion Crow	<i>Corvus corone</i>	240	1.3km south	BirdsDir-A2.2
Rook	<i>Corvus frugilegus</i>	5	1.3km south	BirdsDir-A2.2, Northumberland BAP
Jackdaw	<i>Corvus monedula</i>	246	1.3km south	BirdsDir-A2.2, Northumberland BAP
Cuckoo	<i>Cuculus canorus</i>	1	1.3km south	BAP-2007, Bird-Red, England_NERC_S.41,
Blue Tit	<i>Cyanistes caeruleus</i>	214	1.3km south	Bern-A2
Bewick's Swan	<i>Cygnus columbianus subsp. bewickii</i>	1	1.3km south	BAP-2007, Bern-A2, Bird-Amber, BirdsDir-A1, CMS_A2, CMS_AEWA-A2, England_NERC_S.41
Whooper Swan	<i>Cygnus Cygnus</i>	13	1.3km south	Bern-A2, BirdsDir-A1, CMS_A2, CMS_AEWA-A2, FEP-007_tab2, WACA-Sch1_part1

Mute Swan	<i>Cygnus olor</i>	60	1.3km south	Bird-Amber, BirdsDir-A2.2, CMS_A2, CMS_AEWA-A2
House Martin	<i>Delichon urbicum</i>	67	1.3km south	Bern-A2, Bird-Amber
Great Spotted Woodpecker	<i>Dendrocopos major</i>	23	1.3km south	Bern-A2
Little Egret	<i>Egretta garzetta</i>	2	1.3km south	Bern-A2, BirdsDir-A1, CMS_AEWA-A2, ECCITES-A
Yellowhammer	<i>Emberiza citronella</i>	3	1.3km south	BAP-2007, Bern-A2, England_NERC_S.41, FEP-007_tab2, Northumberland BAP
Reed Bunting	<i>Emberiza schoeniclus</i>	40	1.3km south	BAP-2007, Bern-A2, England_NERC_S.41, FEP-007_tab2, Northumberland BAP
Robin	<i>Erithacus rubecula</i>	206	1.3km south	Bern-A2
Peregrine	<i>Falco peregrinus</i>	5	1.3km south	Bern-A2, BirdsDir-A1, CMS_A2, ECCITES-A, WACA-Sch1_part1
Hobby	<i>Falco Subbuteo</i>	1	1.3km south	Bern-A2, CMS_A2, ECCITES-A, WACA-Sch1_part1
Kestrel	<i>Falco tinnunculus</i>	186	1.3km south	Bern-A2, CMS_A2, ECCITES-A, FEP-007_tab2, Northumberland BAP
Coot	<i>Fulica atra</i>	49	1.3km south	BirdsDir-A2.1, CMS_AEWA-A2
Snipe	<i>Gallinago gallinag</i>	65	1.3km south	BirdsDir-A2.1, CMS_A2, CMS_AEWA-A2, Durham BAP, FEP-007_tab2, Northumberland BAP
Moorhen	<i>Gallinula chloropus</i>	252	1.3km south	BirdsDir-A2.2, CMS_A2, CMS_AEWA-A2
Jay	<i>Garrulus glandarius</i>	12	1.3km south	BirdsDir-A2.2
Oystercatcher	<i>Haematopus ostralegus</i>	68	1.3km south	Bird-Amber, BirdsDir-A2.2, CMS_AEWA-A2, Northumberland BAP
Swallow	<i>Hirundo rustica</i>	78	1.3km south	Bern-A2, Northumberland BAP

Great Grey Shrike	<i>Lanius excubitor</i>	1	1.3km south	Bird-Red, BirdsDir-A2.2, CMS_AEWA-A2
Herring Gull	<i>Larus argentatus</i>	198	1.3km south	Bird-Red, BirdsDir-A2.2, CMS_AEWA-A2
Common Gull	<i>Larus canus</i>	41	1.3km south	Bird-Amber, BirdsDir-A2.2, CMS_AEWA-A2
Lesser Black Headed Gull	<i>Larus fuscus</i>	84	1.3km south	Bird-Amber, BirdsDir-A2.2, CMS_AEWA-A2
Great Black Headed Gull	<i>Larus marinus</i>	18	1.3km south	Bird-Amber, BirdsDir-A2.2, CMS_AEWA-A2
Mediterranean Gull	<i>Larus melanocephalus</i>	1	1.3km south	Bern-A2, Bird-Amber, BirdsDir-A1, CMS_A2, CMS_AEWA-A2, WACA-Sch1_part1
Black-tailed Godwit	<i>Limosa limosa</i>	2	1.3km south	BirdsDir-A2.2, CMS_A2, CMS_AEWA-A2, FEP-007_tab2, RedList_Global_post2001_NT, WACA-Sch1_part1
Linnet	<i>Linaria cannabina</i>	39	1.3km south	Bern-A2, Durham BAP, FEP-007_tab2, Northumberland BAP
Grasshopper Warbler	<i>Locustella naevia</i>	2	1.3km south	BAP-2007, Bird-Red, England_NERC_S.41
Goosander	<i>Mergus merganser</i>	2	1.3km south	BirdsDir-A2.2, CMS_A2, CMS_AEWA-A2
Red Kite	<i>Milvus milvus</i>	23	1.3km south	BirdsDir-A1, CMS_A2, ECCITES-A, FEP-007_tab2, RedList_Global_post2001_NT, WACA-Sch1_part1
Pied Wagtail	<i>Motacilla alba</i>	146	1.3km south	Bern-A2
White Wagtail	<i>Motacilla alba subsp. alba</i>	7	1.3km south	Bern-A2
Grey Wagtail	<i>Motacilla cinerea</i>	10	1.3km south	Bern-A2, Bird-Red

Yellow Wagtail	<i>Motacilla flava</i>	7	1.3km south	Bern-A2, Durham BAP, FEP-007_tab2, Northumberland BAP
Curlew	<i>Numenius arquata</i>	182	1.3km south	Bird-Red, BAP-2007, BirdsDir-A2.2, CMS_A2, CMS_AEWA-A2, Durham BAP, England_NERC_S.41, FEP-007_tab2, Northumberland BAP, RedList_Global_post2001_NT
Wheatear	<i>Oenanthe oenanthe</i>	1	1.3km south	Bern-A2
Osprey	<i>Pandion haliaetus</i>	1	1.3km south	Bird-Amber, BirdsDir-A1, CMS_A2, ECCITES-A, WACA-Sch1_part1
Great Tit	<i>Parus major</i>	213	1.3km south	Bern-A2
House Sparrow	<i>Passer domesticus</i>	240	1.3km south	BAP-2007, Bird-Red, Durham BAP, England_NERC_S.41
Tree Sparrow	<i>Passer montanus</i>	178	1.3km south	BAP-2007, Durham BAP, England_NERC_S.41, FEP-007_tab2, Northumberland BAP
Grey Partridge	<i>Perdix perdix</i>	3	1.3km south	BAP-2007, BirdsDir-A2.1, England_NERC_S.41, FEP-007_tab2, Northumberland BAP
Coal Tit	<i>Periparus ater</i>	156	1.3km south	Bern-A2
Cormorant	<i>Phalacrocorax carbo</i>	17	1.3km south	CMS_AEWA-A2
Pheasant	<i>Phasianus colchicus</i>	134	1.3km south	BirdsDir-A2.1
Redstart	<i>Phoenicurus phoenicurus</i>	1	1.3km south	Bern-A2, Bird-Amber
Willow Warbler	<i>Phylloscopus trochilus</i>	7	1.3km south	Bird-Amber
Magpie	<i>Pica pica</i>	246	1.3km south	BirdsDir-A2.2

Willow Tit	<i>Poecile montana</i>	43	1.3km south	Bern-A2, Bird-Red, FEP-007_tab2
Marsh Tit	<i>Poecile palustris</i>	1	1.3km south	Bern-A2, Bird-Red
Dunnock	<i>Prunella modularis</i>	208	1.3km south o	Bern-A2, Bird-Amber, Northumberland BAP
Bullfinch	<i>Pyrrhula pyrrhula</i>	20	1.3km south	FEP-007_tab2, Northumberland BAP
Goldcrest	<i>Regulus regulus</i>	7	1.3km south	Bern-A2, Northumberland BAP
Sand Martin	<i>Riparia riparia</i>	68	1.3km south	Bern-A2
Nuthatch	<i>Sitta europaea</i>	4	1.3km south	Bern-A2
Siskin	<i>Spinus spinus</i>	2	1.3km south	Bern-A2
Collared Dove	<i>Streptopelia decaocto</i>	89	1.3km south	BirdsDir-A2.2
Starling	<i>Sturnus vulgaris</i>	234	1.3km south	BirdsDir-A2.2, Durham BAP, FEP-007_tab2, Northumberland BAP
Little Grebe	<i>Tachybaptus ruficollis</i>	1	1.3km south	CMS_AEWA-A2
Shelduck	<i>Tadorna tadorna</i>	88	1.3km south	Bern-A2, Bird-Amber, CMS_A2, CMS_AEWA-A2
Wood Sandpiper	<i>Tringa glareola</i>	2	1.3km south	Bern-A2, Bird-Amber, BirdsDir-A1, CMS_A2, CMS_AEWA-A2, WACA-Sch1_part1
Green Sandpiper	<i>Tringa ochropus</i>	3	1.3km south	Bern-A2, Bird-Amber, CMS_A2, CMS_AEWA-A2, WACA-Sch1_part1
Greenshank	<i>Tringa nebularia</i>	5	1.3km south	Bird-Amber, BirdsDir-A2.2, CMS_A2, CMS_AEWA-A2, WACA-Sch1_part1
Redshank	<i>Tringa totanus</i>	81	1.3km south	BirdsDir-A2.2, CMS_A2, CMS_AEWA-A2, Durham

				BAP, FEP-007_tab2, Northumberland BAP
Wren	<i>Troglodytes troglodytes</i>	91	1.3km south	Bern-A2
Redwing	<i>Turdus iliacus</i>	71	1.3km south	Bird-Red, BirdsDir-A2.2, WACA-Sch1_part1
Blackbird	<i>Turdus merula</i>	233	1.3km south	BirdsDir-A2.2
Song Thrush	<i>Turdus philomelos</i>	50	1.3km south	BirdsDir-A2.2, Durham BAP, FEP-007_tab2, Northumberland BAP
Fieldfare	<i>Turdus pilaris</i>	59	1.3km south	Bird-Red, BirdsDir-A2.2, WACA-Sch1_part1
Mistle Thrush	<i>Turdus viscivorus</i>	72	1.3km south	Bird-Red, BirdsDir-A2.2
Lapwing	<i>Vanellus vanellus</i>	191	1.3km south	BAP-2007, BirdsDir-A2.2, CMS_A2, CMS_AEWA-A2, Durham BAP, England_NERC_S.41, FEP-007_tab2, Northumberland BAP

Appendix C

PLANT SPECIES RECORDED

Table C.1 - Plant species recorded

Common name	Latin name	Frequency (DAFOR)
B6: Poor Semi-Improved Grassland		
Perennial Ryegrass	<i>Lolium Perenne</i>	D
Cocksfoot	<i>Dactylis glomerate</i>	F
Creeping Bent	<i>Agrostis stolonifera</i>	F
Creeping Buttercup	<i>Ranunculus repens</i>	O
Soft Rush	<i>Juncus effusus</i>	R
Mouseear	<i>Cerastium fontanum</i>	O
Common Daisy	<i>Bellis perennis</i>	O
Knapweed	<i>Centaurea nigra</i>	O
Common Nettle	<i>Urtica dioica</i>	O
A2.2: Scattered Scrub		
Hawthorn	<i>Crataegus monogyna</i>	F
Bramble	<i>Rubus fruticosus</i>	O
Dog Rose	<i>Rosa canina</i>	O
Common Broom	<i>Cytisus scoparius</i>	O
A3.1: Scattered Broadleaf Trees		
Poplar Sp.	<i>Populus sp.</i>	D
Silver Birch	<i>Betula pendula</i>	F
C3.1: Tall Ruderal		
Willowherb Sp.	<i>Epilobium sp.</i>	F
Male Fern	<i>Dryopteris filix-mas</i>	F
Knapweed	<i>Centaurea nigra</i>	R
Vetch Sp.	<i>Vicia sp.</i>	F
Common Dock	<i>Rumex obtusifolius</i>	F
Hogweed Sp.	<i>Heracleum sp.</i>	R
Creeping Thistle	<i>Cirsium arvense</i>	O

Common name	Latin name	Frequency (DAFOR)
Bramble	<i>Rubus fruticosus</i>	A
G3.1: Standing Water - Oglitrophic		
Perennial Ryegrass	<i>Lolium Perenne</i>	D
Cocksfoot	<i>Dactylis glomerate</i>	F
Creeping Bent	<i>Agrostis stolonifera</i>	F
Common Dock	<i>Rumex obtusifolius</i>	O
Creeping Buttercup	<i>Ranunculus repens</i>	O
J2.1.2: Intact Hedge – Species Poor		
Hawthorn	<i>Crataegus monogyna</i>	D

Appendix D

TARGET NOTES

TN1 – Bat box fixed to gable end of a stable block

TN2 – Culvert going under Lamesley Road draining from ephemeral water body present on Site

TN3 – Outflow of pipe connecting waterbodies together

TN4 – Intake of pipe draining from large ephemeral waterbody into another

TN5 – Soft rush present within ephemeral water body

TN6 – Large metal container acting as shelter for horses

TN7 – Soft rush present without standing water

Appendix E

PHOTOGRAPHS

Table E.1 - Photographs



Photo 1: Culvert under Lamesley Road (TN2)



Photo 2: Overview of habitat with ephemeral water present



Photo 3: Hawthorn hedgerow within the Site.



Photo 4: Poplar tree line at the eastern boundary of the Site.

Appendix F

HSI CALCULATIONS

Table F.1 - HSI Calculations

Pond Ref.	S1: Geographic location	S2: Water body area	S3: Water body permanence	S4: Water quality	S5: % Shade (1m from bank)	S6: Impact of waterfowl	S7: Fish stocks	S8: Number of water bodies <1km	S9: Terrestrial habitat	S10: Macrophyte cover (%cover)	HSI SCORE	HSI CATEGORY
P1	1	0.1	0.1	0.33	1	1	1	1	0.33	0.3	0.45	Poor
P2	1	0.1	0.1	0.33	1	1	1	1	0.33	0.3	0.45	Poor
P3	1	0.1	0.1	0.33	1	1	1	1	0.33	0.3	0.45	Poor
P4	1	0.1	0.1	0.33	1	1	1	1	0.33	0.3	0.45	Poor
P5	1	0.1	0.1	0.33	1	1	1	1	0.33	0.3	0.45	Poor
P6	1	0.1	0.1	0.33	1	1	1	1	0.33	0.3	0.45	Poor

Appendix D

VISUAL EFFECTS SCHEDULE

CONTENTS

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1. RESIDENTIAL RECEPTORS

Table 1-1 - Residential Receptors

No.	Viewpoint (Relevant)	Location (address)	Nr of props	Type of property, number of storeys, size of windows, property elevation	Minimum Distance to Scheme	Existing view Sensitivity	Change in view and Magnitude of Impact (Construction Winter Year 1 Summer Year 15)	Likely Significance of Effects: Construction Winter year 1 Summer year 15	Notes: Nature/angle of view Screened/filtered Intrusive features Number & location of windows with view Scheme elements visible
R5	3	Haggs Lane: Beldy Farm	1	Detached 2 storey, large windows, front and side elevation	1km	<p>Open sloping pasture and arable fields, Banesley Lane woodland in foreground. Tranquillity of rural view disturbed by traffic on A1 bridge crossing the East Coast Mainline Railway and Gateshead urban area beyond A1.</p> <p>Sensitivity: High</p>	<p>Construction: Allerdene Bridge and additional land forming compound between Lamesley Road and Longacre Wood - 3 years. Allerdene Bridge construction - 3.5 years, although the most conspicuous operations such as those requiring cranes would be short term e.g. bridge deck and parapets - 3 months. Distant views of construction activity as small element in foreground of expansive Gateshead urban area, filtered by retained intervening planting – Minor adverse</p> <p>Winter year 1: Realignment of Allerdene Bridge and embankment would be perceptible but small element within wider view of Gateshead, intervening planting continues to filter views - Negligible adverse</p> <p>Summer year 15: Establishment of planting at Allerdene Bridge embankment would reinstate view as before construction - No change</p>	<p>Slight adverse</p> <p>Slight adverse</p> <p>Neutral</p>	<p>Long distance, oblique view</p> <p>Filtered by intervening vegetation</p> <p>Gateshead</p> <p>All upper storey front and side windows</p> <p>Allerdene compound, Allerdene Bridge</p>

No.	Viewpoint (Relevant)	Location (address)	Nr of props	Type of property, number of storeys, size of windows, property elevation	Minimum Distance to Scheme	Existing view Sensitivity	Change in view and Magnitude of Impact (Construction Winter Year 1 Summer Year 15)	Likely Significance of Effects: Construction Winter year 1 Summer year 15	Notes: Nature/angle of view Screened/filtered Intrusive features Number & location of windows with view Scheme elements visible
R7	4	Lamesley Road: North Farm, 1-4 The Courtyard	5	Adjoining 2 storey and 1 storey (farm building conversions), small multi-pane windows, side and rear elevation	320m	Open flat pasture in foreground disturbed by existing views of traffic on A1 and at the crossing of the East Coast Mainline Railway, pylons, railway lighting towers, and Gateshead urban area and Angel of the North are visible within the context of the A1. Sensitivity: High	<p>Construction: Early operations to construct the new AGI adjacent to Lamesley Road will occur in the context of the existing A1. Allerdene compound between Lamesley Road and Longacre Wood in foreground, and additional land to the south east extending to Smithy Lane - 3 years. Vegetation clearance at Coal House overbridge would open up views to Kingsway Viaduct construction - 1 year, coinciding with Allerdene Bridge construction - 3.5 years, although the most conspicuous operations such as those requiring cranes would be short term e.g. bridge deck and parapets - 3 months. Construction activity and compound replacing pasture in the foreground of views for a sustained period, large scale change – Major adverse</p> <p>Winter year 1: Reinstated Allerdene compound area would be in foreground, increased awareness of traffic on the A1. Reinstated AGI would be visible in the foreground.</p> <p><u>Viaduct option</u> – Allerdene Bridge realigned closer to properties on a series of piers.</p> <p><u>Embankment option</u> – Allerdene Bridge realigned closer to properties on a large embankment. – Moderate adverse</p>	<p>Large adverse</p> <p>Moderate adverse</p>	<p>Mid distance, oblique view Filtered by Longacre Wood Pylons, lighting tower, Gateshead Rear elevation windows Allerdene compound, and additional land, partially screened by earth bund Kingsway Viaduct, Allerdene Bridge</p>

No.	Viewpoint (Relevant)	Location (address)	Nr of props	Type of property, number of storeys, size of windows, property elevation	Minimum Distance to Scheme	Existing view Sensitivity	Change in view and Magnitude of Impact (Construction Winter Year 1 Summer Year 15)	Likely Significance of Effects: Construction Winter year 1 Summer year 15	Notes: Nature/angle of view Screened/filtered Intrusive features Number & location of windows with view Scheme elements visible
							<p>Summer year 15: Establishment of planting at Coal House overbridge would filter views of traffic. Planting to the boundary of the AGI will screen views.</p> <p><u>Viaduct option</u> – Planting on Allerdene Bridge embankment would partially soften the appearance on the structure but traffic on the section of the bridge on piers would remain clearly visible – Moderate adverse</p>	Moderate adverse	
							<p><u>Embankment option</u> – Planting on Allerdene Bridge embankment would soften the appearance of the landform and integrate it with adjacent areas of woodland, Allerdene Bridge would remain a perceptible change – Minor adverse</p>	Embankment option - Slight adverse	
R8	6	Lamesley Road: 4-6 The Cottages, The Vicarage, Temple Meads	5	Terraced 2 storey, small windows, rear elevation Detached 1 storey, small windows, rear elevation	450m	Open flat pasture in the foreground disturbed by traffic on existing A1 and East Coast Mainline Railway bridge, pylons, railway lighting tower, and Gateshead urban area and Angel of the North within the context of the A1. Sensitivity: High	Construction: Early operations to construct the new AGI adjacent to Lamesley Road will occur in the context of the existing A1. Allerdene compound between Lamesley Road and Longacre Wood in mid distance, with additional land extending to Smithy Lane in the foreground - 3 years. Allerdene Bridge construction - 3.5 years, although the most conspicuous operations such as those requiring cranes would be short term e.g. bridge deck and parapets - 3 months. Construction	Large adverse	Mid distance, oblique view Filtered by Longacre Wood Pylons, lighting tower, Gateshead Rear elevation windows Allerdene compound, and additional land, partially screened by earth bund, Allerdene Bridge

No.	Viewpoint (Relevant)	Location (address)	Nr of props	Type of property, number of storeys, size of windows, property elevation	Minimum Distance to Scheme	Existing view Sensitivity	Change in view and Magnitude of Impact (Construction Winter Year 1 Summer Year 15)	Likely Significance of Effects: Construction Winter year 1 Summer year 15	Notes: Nature/angle of view Screened/filtered Intrusive features Number & location of windows with view Scheme elements visible
							<p>activity and compound replacing pasture in the mid distance for a sustained period, large scale change – Major adverse</p>		
							<p>Winter year 1: Reinstated compound area and AGI would be in mid distance, increased awareness of traffic on the A1.</p> <p><u>Viaduct option</u> – Allerdene Bridge realigned closer to properties on a series of piers.</p> <p><u>Embankment option</u> – Allerdene Bridge realigned closer to properties on a large embankment.</p> <p>– Moderate adverse</p>	Moderate adverse	
							<p>Summer year 15: Establishment of planting at Coal House overbridge would filter views of traffic. Planting to the boundary of the AGI will screen views.</p> <p><u>Viaduct option</u> – Planting on Allerdene Bridge embankment would partially soften the appearance on the structure but traffic on the section of the bridge on piers would remain clearly visible – Moderate adverse</p>	Viaduct option - Moderate adverse	

No.	Viewpoint (Relevant)	Location (address)	Nr of props	Type of property, number of storeys, size of windows, property elevation	Minimum Distance to Scheme	Existing view Sensitivity	Change in view and Magnitude of Impact (Construction Winter Year 1 Summer Year 15)	Likely Significance of Effects: Construction Winter year 1 Summer year 15	Notes: Nature/angle of view Screened/filtered Intrusive features Number & location of windows with view Scheme elements visible
							<p><u>Embankment option</u> – Planting on Allerdene Bridge embankment would soften the appearance of the landform and integrate it with adjacent areas of woodland, Allerdene Bridge would remain a perceptible change – Minor adverse</p>	<p>Embankment option - Slight adverse</p>	
R10		Lamesley Road: South Farm House, The Granary, The Stables, The Dairy	4	Adjoining 2 storey and 1 storey (farm building conversions), small windows, front and rear elevation	600m	<p>Open flat pasture in foreground, disturbed by Smithy Lane embankment, traffic on A1 East Coast Mainline Railway bridge and Tyne Marshalling Yard with floodlighting columns within the context of the view of the A1.</p> <p>Sensitivity: High</p>	<p>Construction: Allerdene compound between Lamesley Road and Longacre Wood in distance, with the additional land compound extending up to Smithy Lane - 3 years. Allerdene Bridge construction - 3.5 years, although the most conspicuous operations such as those requiring cranes would be short term e.g. bridge deck and parapets - 3 months. Construction activity and compound replacing pasture in distant views for a sustained period, partially screened by Smithy Lane – Moderate adverse</p> <p>Winter year 1: Increased awareness of traffic on the A1 and Allerdene Bridge realigned closer, Smithy Lane in foreground – Minor adverse</p>	<p>Moderate adverse</p> <p>Slight adverse</p>	<p>Long distance, direct view Partially screened by Smithy Lane, filtered by intervening planting Lighting tower, Smithy Lane, industrial estate including chimneys Front and rear windows Allerdene compound, and awareness of additional land compound immediately beyond Smithy Lane Allerdene Bridge</p>

No.	Viewpoint (Relevant)	Location (address)	Nr of props	Type of property, number of storeys, size of windows, property elevation	Minimum Distance to Scheme	Existing view Sensitivity	Change in view and Magnitude of Impact (Construction Winter Year 1 Summer Year 15)	Likely Significance of Effects: Construction Winter year 1 Summer year 15	Notes: Nature/angle of view Screened/filtered Intrusive features Number & location of windows with view Scheme elements visible
							<p>Summer year 15: Planting on Allerdene Bridge embankment would soften the appearance of the landform and integrate it with adjacent areas of woodland, new bridge structure would remain perceptible – Negligible adverse</p>	<p>Slight adverse</p>	

2. FOOTPATH RECEPTORS

Table 2-1 - PRoW Receptors

No.	VP	Name	Location (grid ref)	Length of route affected	Minimum Distance to Scheme	Existing view Sensitivity	Change in view Impacts	Likely Significance of Effects: Construction Winter year 1 Summer year 15	Notes: Nature/angle of view Screened/filtered Intrusive features Scheme elements visible
P1a	31	Great North Forest Heritage Trail West of Kibblesworth: Lamesley 72(br)#3 Lamesley 72(br)#1	NZ 22500 56751 NZ 25594 56736	1km	2.3km	<p>Trees on the footpath embankment filter views across sloping arable fields in the foreground. Buildings within Kibblesworth and intervening woodland screen and filter long distance views to Lamesley, East Coast Main Line and the A1 in the valley bottom. Long distance views are possible across the Gateshead urban area including the industrial estate. The ridge skyline is punctuated to the north east by St John's Church steeple and the 4 white rendered multi storey blocks at Beacon Lough.</p> <p>Sensitivity: High</p>	<p>Construction: Allerdene compound between Lamesley Road and Longacre Wood, and extending south to Smithy Lane with the additional land - 3 years, in combination with the construction of the proposed AGI. Kingsway Viaduct construction - 1 year, Eighton Lodge overbridge widening - 1 year, coinciding with Allerdene Bridge construction - 3.5 years, although the most conspicuous operations such as those requiring cranes would be short term e.g. bridge deck and parapets - 3 months. Distant, heavily filtered views to Allerdene compound and elevated construction elements of Kingsway Viaduct, Eighton Lodge overbridge and Allerdene Bridge within the context of expansive views across the valley to Gateshead – Minor adverse</p>	Slight adverse	Long distance, oblique view Filtered by woodland Telegraph poles and wires, pylons, East Coast Main Line, Gateshead Allerdene compound, extended to the south by additional land, Kingsway Viaduct, Eighton Lodge overbridge, Allerdene Bridge
						<p>Winter year 1: Widening on Kingsway Viaduct, Eighton Lodge overbridge, and realignment and increased height of Allerdene Bridge would be imperceptible, view as before construction - No change</p>	Neutral		

No.	VP	Name	Location (grid ref)	Length of route affected	Minimum Distance to Scheme	Existing view Sensitivity	Change in view Impacts	Likely Significance of Effects: Construction Winter year 1 Summer year 15	Notes: Nature/angle of view Screened/filtered Intrusive features Scheme elements visible
							Summer year 15: With the exception of a modified bridge design at Allerdene, there is not anticipated to be a significantly modified view - No change	Neutral	
P1b		Great North Forest Heritage Trail East of Kibblesworth: Lamesley 72(br)#1	NZ 23664 56419 NZ 25594 56736	700m	1.2km	Trees along the footpath filter views across sloping arable fields with frequent hedgerows and belts of woodland in foreground. Distant filtered views to the East Coast Main Line and A1 in the valley bottom. Gateshead urban area beyond A1. Sensitivity: High	Construction: Eighton Lodge overbridge widening - 1 year, coinciding with Allerdene Bridge construction - 3.5 years and AGI construction, although the most conspicuous operations such as those requiring cranes would be short term e.g. bridge deck and parapets - 3 months. Distant, heavily filtered views to elevated construction elements of Eighton Lodge overbridge and Allerdene Bridge within the context of expansive views across the valley to Gateshead - Minor adverse	Slight adverse	Long distance, oblique view Filtered by intervening vegetation East Coast Main Line, Gateshead Eighton Lodge overbridge, Allerdene Bridge, awareness of compounds but in the context of the ECML marshalling yards and Team Valley industrial estate
							Winter year 1: New AGI, widening on Eighton Lodge overbridge and realignment and increased height of Allerdene Bridge would be imperceptible, view as before construction - No change	Neutral	
							Summer year 15: The view is not anticipated to substantially change as a result of the Scheme - No change	Neutral	

No.	VP	Name	Location (grid ref)	Length of route affected	Minimum Distance to Scheme	Existing view Sensitivity	Change in view Impacts	Likely Significance of Effects: Construction Winter year 1 Summer year 15	Notes: Nature/angle of view Screened/filtered Intrusive features Scheme elements visible
P3	4	Lamesley 1	NZ 24818 58487 NZ 25094 58249	450m	60m	<p>River Team and floodplain pasture in the foreground, vegetation along the river, Banesley Lane and Lamesley Road filter views to traffic on the A1 Coal House overbridge and railway bridge. Long distance views are possible across the Gateshead urban area.</p> <p>Sensitivity: High</p>	<p>Construction: Early operations to construct the new AGI adjacent to Lamesley Lane will occur in the foreground. Allerdene compound between Lamesley Road and Longacre Wood, and potential awareness of the additional land compound extending to the south east - 3 years. Vegetation clearance at Coal House overbridge would open up views to Kingsway Viaduct construction - 1 year, coinciding with Allerdene Bridge construction - 3.5 years, although the most conspicuous operations such as those requiring cranes would be short term e.g. bridge deck and parapets - 3 months. Vegetation along the River Team would remain in the foreground, compound and construction activity would be readily apparent through vegetation – Moderate adverse</p> <p>Winter year 1: Presence of the new AGI and reinstated compound area would be in foreground, increased awareness of traffic on the A1.</p> <p><u>Viaduct option</u> – Allerdene Bridge realigned closer to properties on a series of piers.</p> <p><u>Embankment option</u> – Allerdene Bridge realigned closer to properties on a large embankment.</p> <p>– Moderate adverse</p>	<p>Large adverse</p> <p>Moderate adverse</p>	<p>Mid distance, direct view Filtered by vegetation, AGI in the foreground, Lighting columns, Gateshead Allerdene compound, and glimpses of the additional land compound, Kingsway Viaduct, Allerdene Bridge</p>

No.	VP	Name	Location (grid ref)	Length of route affected	Minimum Distance to Scheme	Existing view Sensitivity	Change in view Impacts	Likely Significance of Effects: Construction Winter year 1 Summer year 15	Notes: Nature/angle of view Screened/filtered Intrusive features Scheme elements visible
							<p>Summer year 15: Establishment of planting at Coal House overbridge would filter views of traffic, with boundary vegetation to the AGI tying into existing hedgerows in the foreground.</p> <p><u>Viaduct option</u> – Planting on Allerdene Bridge embankment would partially soften the appearance on the structure but traffic on the section of the bridge on piers would remain clearly visible – Moderate adverse</p>	Viaduct option - Moderate adverse	
							<p><u>Embankment option</u> – Planting on Allerdene Bridge embankment would soften the appearance of the landform and integrate it with adjacent areas of woodland, Allerdene Bridge would remain a perceptible change – Minor adverse</p>	Embankment option - Slight adverse	
P4		Lamesley 16	NZ 23268 57244NZ 22881 57035	250m	1.8km	<p>Sloping arable field, long distance views to traffic on the A1 railway bridge and Gateshead urban area are heavily filtered by intervening woodland.</p> <p>Sensitivity: High</p>	<p>Construction: Allerdene compound between Lamesley Road and Longacre Wood, and additional land extending south to Smithy Lane - 3 years. Allerdene Bridge construction - 3.5 years, although the most conspicuous operations such as those requiring cranes would be short term e.g. bridge deck and parapets - 3 months. Distant, heavily filtered views to compound and elevated construction elements of Allerdene Bridge within the context of views across the valley to Gateshead - Minor adverse</p>	Slight adverse	<p>Long distance, direct view filtered by woodland Gateshead</p> <p>Allerdene compound, Allerdene Bridge</p>

No.	VP	Name	Location (grid ref)	Length of route affected	Minimum Distance to Scheme	Existing view Sensitivity	Change in view Impacts	Likely Significance of Effects: Construction Winter year 1 Summer year 15	Notes: Nature/angle of view Screened/filtered Intrusive features Scheme elements visible
							<p>Winter year 1: Realignment and increased height of Allerdene Bridge would be imperceptible, view as before construction - No change</p> <p>Summer year 15: View comparable with that prior to construction - No change</p>	<p>Neutral</p> <p>Neutral</p>	
P5		Lamesley 35	NZ 23666 56909 NZ 24168 56724	280m	1.8km	<p>Sloping pasture and arable fields, long distance views to traffic on the A1 railway bridge and Gateshead urban area are heavily filtered by intervening woodland.</p> <p>Sensitivity: High</p>	<p>Construction: Early operations to construct the new AGI adjacent to Lamesley Lane will occur in the context of the existing A1. Allerdene compound between Lamesley Road and Longacre Wood and additional land extending south to Smithy Lane - 3 years. Allerdene Bridge construction - 3.5 years, although the most conspicuous operations such as those requiring cranes would be short term e.g. bridge deck and parapets - 3 months. Distant, heavily filtered views to compound and elevated construction elements of Allerdene Bridge within the context of views across the valley to Gateshead - Minor adverse</p>	Slight adverse	<p>Long distance, oblique view Filtered by woodland Gateshead Allerdene compound, Allerdene Bridge</p>

No.	VP	Name	Location (grid ref)	Length of route affected	Minimum Distance to Scheme	Existing view Sensitivity	Change in view Impacts	Likely Significance of Effects: Construction Winter year 1 Summer year 15	Notes: Nature/angle of view Screened/filtered Intrusive features Scheme elements visible
							<p>Winter year 1: New AGI, realignment and increased height of Allerdene Bridge would be imperceptible, View comparable with that prior to construction - No change</p>	Neutral	
							<p>Summer year 15: View comparable with that prior to construction - No change</p>	Neutral	
P6		Lamesley 37	NZ 24046 57733 NZ 24300 56769	600m	1.3km	<p>Sloping pasture and arable fields, long distance views to traffic on the A1 railway bridge and Gateshead urban area are heavily filtered by intervening woodland.</p> <p>Sensitivity: High</p>	<p>Construction: Early operations to construct the new AGI adjacent to Lamesley Lane will occur in the context of the existing A1. Allerdene compound between Lamesley Road and Longacre Wood and additional land extending to Smithy Lane - 3 years. Allerdene Bridge construction - 3.5 years, although the most conspicuous operations such as those requiring cranes would be short term e.g. bridge deck and parapets - 3 months. Distant, heavily filtered views to compounds and elevated construction elements of Allerdene Bridge within the context of views across the valley to Gateshead - Minor adverse</p>	Slight adverse	<p>Long distance, oblique view Filtered by woodland Gateshead Allerdene compound, Allerdene Bridge</p>

No.	VP	Name	Location (grid ref)	Length of route affected	Minimum Distance to Scheme	Existing view Sensitivity	Change in view Impacts	Likely Significance of Effects: Construction Winter year 1 Summer year 15	Notes: Nature/angle of view Screened/filtered Intrusive features Scheme elements visible
							<p>Winter year 1: New AGI, realignment and increased height of Allerdene Bridge would be imperceptible, View comparable with that prior to construction - No change</p>	Neutral	
							<p>Summer year 15: View comparable with that prior to construction - No change</p>	Neutral	
P7		Lamesley 29	NZ 23871 56541 NZ 23816 55703	300m	2.2km	<p>Sloping pasture and Kibblesworth in foreground, intervening woodland filters long distance views to Lamesley, East Coast Main Line and the A1 in the valley bottom. Long distance views are possible across the Gateshead urban area including the industrial estate.</p> <p>Sensitivity: High</p>	<p>Construction: Early operations to construct the new AGI adjacent to Lamesley Lane will occur in the context of the existing A1. Allerdene compound between Lamesley Road and Longacre Wood, and extending south to Smithy Lane with the additional land - 3 years. Kingsway Viaduct construction - 1 year, Eighton Lodge overbridge widening - 1 year, coinciding with Allerdene Bridge construction - 3.5 years, although the most conspicuous operations such as those requiring cranes would be short term e.g. bridge deck and parapets - 3 months. Distant, heavily filtered views to Allerdene compounds and elevated construction elements of Kingsway Viaduct, Eighton Lodge overbridge and Allerdene Bridge within the context of expansive views across the valley to Gateshead – Minor adverse</p>	Slight adverse	<p>Long distance, oblique view Filtered by woodland Telegraph poles and wires, pylons, East Coast Main Line, Gateshead Allerdene compound and additional compound, Kingsway Viaduct, Eighton Lodge overbridge, Allerdene Bridge</p>

No.	VP	Name	Location (grid ref)	Length of route affected	Minimum Distance to Scheme	Existing view Sensitivity	Change in view Impacts	Likely Significance of Effects: Construction Winter year 1 Summer year 15	Notes: Nature/angle of view Screened/filtered Intrusive features Scheme elements visible
							<p>Winter year 1: New AGI, widening on Kingsway Viaduct, Eighton Lodge overbridge, and realignment and increased height of Allerdene Bridge would be imperceptible, View comparable with that prior to construction - No change</p>	<p>Neutral</p>	
							<p>Summer year 15: View comparable with that prior to construction - No change</p>	<p>Neutral</p>	

3. OTHER RECEPTORS

Table 3-1 - Other Receptors

No.	VP	Location (address)	Type	Sensitivity	Minimum Distance to Scheme	Existing view Sensitivity	Change in view Impacts	Likely Significance of Effects: Construction Winter year 1 Summer year 15	Notes: Nature/angle of view Screened/filtered Intrusive features Scheme elements visible
O2	5	Banesley Lane Woodland - viewpoint with benches	Woodland	High	550m	<p>Pasture sloping down to the River Team in the foreground. The setting of Team Valley industrial estate, Lamesley, East Coast Main Line, A1 in the valley bottom and the relationship between these elements is revealed from this viewpoint. Expansive views across the Team Valley to Gateshead urban area, the ridge skyline is punctuated to the north east by St John's Church steeple, the 4 white rendered multi storey blocks at Beacon Lough, and further south by the multi storey blocks at Harlow Green, and the Angel of the North.</p> <p>Sensitivity: High</p>	<p>Construction: Early operations to construct the new AGI adjacent to Lamesley Road will occur in the context of the existing A1. Allerdene compound between Lamesley Road and Longacre Wood and additional land extending to Smithy Lane - 3 years. Vegetation clearance at Coal House overbridge would open up views to Kingsway Viaduct construction - 1 year, coinciding with Allerdene Bridge construction - 3.5 years, although the most conspicuous operations such as those requiring cranes would be short term e.g. bridge deck and parapets - 3 months. Pylons and Lamesley Road in the foreground, retained planting continues to screen and filter views. Compounds and bridge construction activity readily perceptible within expansive views of urban edge including industrial estate – Minor adverse</p>	Slight adverse	<p>Long distance, direct Screened and filtered by vegetation along A1, Longacre Wood Pylons, East Coast Main Line, industrial estate including chimneys, Gateshead Allerdene compound, and additional land extending to Smithy Lane, Kingsway Viaduct, Allerdene Bridge</p>
						<p>Winter year 1: Increased awareness of traffic on Coal House overbridge, views filtered by retained planting and awareness of Allerdene bridge also limited by view along line of bridge. New AGI barely perceptible.</p> <p><u>Viaduct option</u> – Increased height of Allerdene Bridge emphasised by series of piers to view along line on bridge.</p> <p><u>Embankment option</u> - Increased height of Allerdene Bridge emphasised by large embankment.</p> <p>– Negligible adverse</p>	Slight adverse		

No.	VP	Location (address)	Type	Sensitivity	Minimum Distance to Scheme	Existing view Sensitivity	Change in view Impacts	Likely Significance of Effects: Construction Winter year 1 Summer year 15	Notes: Nature/angle of view Screened/filtered Intrusive features Scheme elements visible
							Summer year 15: Establishment of planting at Coal House overbridge and Allerdene Bridge embankment would reinstate view as before construction - No change	Neutral	
O3	3	Silverhills Garden Centre	Commercial	Moderate	1km	Sloping pasture and arable fields, Banesley Lane woodland in foreground, disturbed by traffic on A1 railway bridge and Gateshead urban area beyond A1. Sensitivity: Moderate	Construction: Allerdene compound between Lamesley Road and Longacre Wood, and additional land compound - 3 years. Allerdene Bridge construction - 3.5 years, although the most conspicuous operations such as those requiring cranes would be short term e.g. bridge deck and parapets - 3 months. Distant views of construction activity in foreground of Gateshead urban area, filtered by retained intervening planting – Minor adverse Winter year 1: Realignment of Allerdene Bridge and embankment would be perceptible but small element within wider view of Gateshead, intervening planting continues to filter views – Negligible adverse Summer year 15: Establishment of planting at Allerdene Bridge embankment would reinstate view to that prior to construction - No change	Slight adverse Neutral Neutral	Long distance, oblique view Filtered by intervening vegetation Gateshead Allerdene compound, and additional land compound extending to the south, Allerdene Bridge

No.	VP	Location (address)	Type	Sensitivity	Minimum Distance to Scheme	Existing view Sensitivity	Change in view Impacts	Likely Significance of Effects: Construction Winter year 1 Summer year 15	Notes: Nature/angle of view Screened/filtered Intrusive features Scheme elements visible
O5		St Andrew's Church	Church, village hall	Moderate	550m	<p>Mature trees within church grounds and Smithy Lane in foreground. Flat valley bottom pasture extends to the A1 with traffic visible on embankment and railway bridge. Gateshead urban area and Angel of the North beyond A1.</p> <p>Sensitivity: Moderate</p>	<p>Construction: Early operations to construct the new AGI adjacent to Lamesley Road will occur in the context of the existing A1. Allerdene compound between Lamesley Road and Longacre Wood in mid distance, with additional land extending to the south and to Smithy Lane - 3 years. Allerdene Bridge construction - 3.5 years, although the most conspicuous operations such as those requiring cranes would be short term e.g. bridge deck and parapets - 3 months. Construction activity and compound replacing pasture in the foreground for a sustained period, filtered by retained vegetation and earth bunds in foreground – Moderate adverse</p>	Moderate adverse	<p>Mid distance, oblique view Filtered by Longacre Wood Pylons, street lighting columns, industrial estate, Gateshead Allerdene compound, and additional compound extending to the foreground and visible from the northern boundary and graveyard, Allerdene Bridge</p>
							<p>Winter year 1: Reinstated compound area would be in mid distance, increased awareness of traffic on the A1. New AGI barely perceptible.</p> <p><u>Viaduct option</u> – Allerdene Bridge realigned closer to properties on a series of piers.</p> <p><u>Embankment option</u> – Allerdene Bridge realigned closer to properties on a large embankment.</p> <p>– Moderate adverse</p>	Slight adverse	

No.	VP	Location (address)	Type	Sensitivity	Minimum Distance to Scheme	Existing view Sensitivity	Change in view Impacts	Likely Significance of Effects: Construction Winter year 1 Summer year 15	Notes: Nature/angle of view Screened/filtered Intrusive features Scheme elements visible
							<p>Summer year 15: Establishment of planting at Coal House overbridge would filter views of traffic.</p> <p><u>Viaduct option</u> – Planting on Allerdene Bridge embankment would partially soften the appearance on the structure but traffic on the section of the bridge on piers would remain clearly visible – Moderate adverse</p>	Viaduct option - Slight adverse	
							<p><u>Embankment option</u> – Planting on Allerdene Bridge embankment would soften the appearance of the landform and integrate it with adjacent areas of woodland, Allerdene Bridge would remain a perceptible change – Minor adverse</p>	Embankment option - Neutral	
O7		Hot Tub Hideaway	Hotel	Moderate	600m	<p>Flat pasture in foreground, disturbed by Smithy Lane embankment, traffic on A1 railway bridge, Team Valley industrial estate beyond A1.</p> <p>Sensitivity: Moderate</p>	<p>Construction: Allerdene compound between Lamesley Road and Longacre Wood in distance and additional land extending south to Smithy Lane - 3 years. Allerdene Bridge construction - 3.5 years, although the most conspicuous operations such as those requiring cranes would be short term e.g. bridge deck and parapets - 3 months. Construction activity and compound replacing pasture in the distance for a sustained period, partially screened by Smithy Lane – Moderate adverse</p>	Moderate adverse	<p>Long distance, direct view Partially screened by Smithy Lane, filtered by intervening planting Lighting tower, Smithy Lane, industrial estate including chimneys Allerdene compound, Allerdene Bridge</p>

No.	VP	Location (address)	Type	Sensitivity	Minimum Distance to Scheme	Existing view Sensitivity	Change in view Impacts	Likely Significance of Effects: Construction Winter year 1 Summer year 15	Notes: Nature/angle of view Screened/filtered Intrusive features Scheme elements visible
							<p>Winter year 1: Increased awareness of traffic on the A1 and Allerdene Bridge realigned closer, Smithy Lane in foreground – Minor adverse</p>	Slight adverse	
							<p>Summer year 15: Planting on Allerdene Bridge embankment would soften the appearance of the landform and integrate it with adjacent areas of woodland – Negligible adverse</p>	Neutral	

4. HIGHWAYS RECEPTORS

Table 4-1 - Highway Receptors

No.	VP	Name	Location (grid ref)	Length of route affected	Minimum Distance to Scheme	Existing view Sensitivity	Change in view and Magnitude of Impact (Construction Winter Year 1 Summer Year 15)	Significance of Effects: Construction Winter year 1 Summer year 15	Notes: Nature/angle of view Screened/filtered Intrusive features Number & location of windows with view Scheme elements visible
H1	4, 6	Lamesley Road	NZ 25096 58252	510m	50m	<p>Vegetation along the roadside partially filters views of flat pasture in the foreground and across the valley bottom to traffic on the A1 overbridge and railway bridge. Gateshead urban area visible beyond the A1, multi storey blocks at Harlow Green and the Angel of the North punctuate the skyline to the south east.</p> <p>Sensitivity: Low</p>	<p>Construction: Early operations to construct the new AGI adjacent to Lamesley Road will occur in the context of the existing A1. Allerdene compound between Lamesley Road and Longacre Wood in foreground, with additional land compound extending to Smithy Lane - 3 years. Vegetation clearance at Coal House overbridge would open up views to Kingsway Viaduct construction - 1 year, coinciding with Allerdene Bridge construction - 3.5 years, although the most conspicuous operations such as those requiring cranes would be short term e.g. bridge deck and parapets - 3 months. Construction activity and compound replacing pasture in the foreground of views for a sustained period – Major adverse</p>	Moderate adverse	<p>Mid distance, oblique view Filtered by roadside vegetation Pylons, telegraph poles and wires, Gateshead Allerdene compound and additional land compound, Kingsway Viaduct, Allerdene Bridge</p>
							<p>Winter year 1: Reinstated compound area would be in foreground, increased awareness of traffic on the A1, with AGI immediately adjacent.</p> <p><u>Viaduct option</u> – Allerdene Bridge realigned closer to properties on a series of piers.</p> <p><u>Embankment option</u> – Allerdene Bridge realigned closer to properties on a large embankment.</p> <p>– Moderate adverse</p>	Slight adverse	

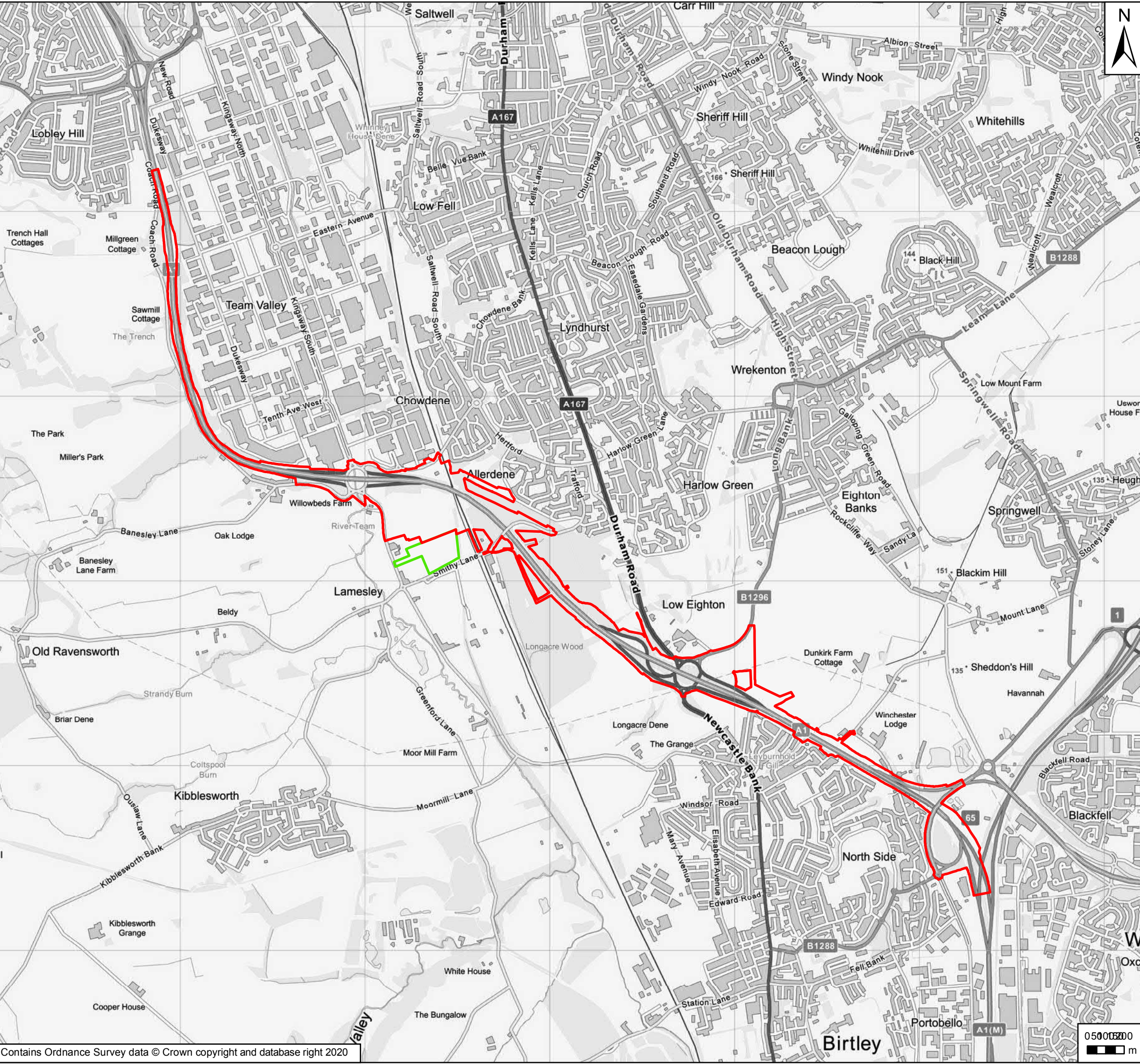
No.	VP	Name	Location (grid ref)	Length of route affected	Minimum Distance to Scheme	Existing view Sensitivity	Change in view and Magnitude of Impact (Construction Winter Year 1 Summer Year 15)	Significance of Effects: Construction Winter year 1 Summer year 15	Notes: Nature/angle of view Screened/filtered Intrusive features Number & location of windows with view Scheme elements visible
							<p>Summer year 15: Establishment of planting at Coal House overbridge would filter views of traffic.</p> <p><u>Viaduct option</u> – Planting on Allerdene Bridge embankment would partially soften the appearance on the structure but traffic on the section of the bridge on piers would remain clearly visible – Moderate adverse</p>	<p>Viaduct option – Slight adverse</p>	
							<p><u>Embankment option</u> – Planting on Allerdene Bridge embankment would soften the appearance of the landform and integrate it with adjacent areas of woodland, Allerdene Bridge would remain a perceptible change – Minor adverse</p>	<p>Embankment option – Neutral</p>	
H2	7	Smithy Lane	NZ 25686 58192	470m	200m	<p>Flat valley bottom pasture and East Coast Main Line in foreground. Planting on the road embankment and Longacre Wood, and the railway bridge balustrade screen and filter views to traffic on A1 and A1 railway bridge. Long distance views to Gateshead urban area.</p> <p>Sensitivity: Low</p>	<p>Construction: Views of the early operations to construct the new AGI adjacent to Lamesley Road will occur in the context of the existing A1. Additional land compound extending to immediately adjacent in the foreground with Allerdene compound between Lamesley Road and Longacre Wood in mid distance - 3 years. Allerdene Bridge construction - 3.5 years, although the most conspicuous operations such as those requiring cranes would be short term e.g. bridge deck and parapets - 3 months. Construction activity and compound replacing pasture in the foreground and in the mid distance for a sustained period – Major adverse</p>	<p>Moderate adverse</p>	<p>Foreground would be the additional land compound, comprising earth bunds and plant machinery visible on rising ground as Smithy Lane bridge is approached.</p> <p>Mid distance, oblique view Screened and filtered by planting, Longacre Wood, railway bridge balustrade Pylons, railway, Gateshead Allerdene compound, Allerdene Bridge</p>

No.	VP	Name	Location (grid ref)	Length of route affected	Minimum Distance to Scheme	Existing view Sensitivity	Change in view and Magnitude of Impact (Construction Winter Year 1 Summer Year 15)	Significance of Effects: Construction Winter year 1 Summer year 15	Notes: Nature/angle of view Screened/filtered Intrusive features Number & location of windows with view Scheme elements visible
							<p>Winter year 1: Reinstated compound area would be in mid distance, increased awareness of traffic on the A1 with the AGI immediately adjacent.</p> <p><u>Viaduct option</u> – Allerdene Bridge realigned closer to properties on a series of piers.</p> <p><u>Embankment option</u> – Allerdene Bridge realigned closer to properties on a large embankment.</p> <p>– Moderate adverse</p>	Slight adverse	
							<p>Summer year 15: Establishment of planting at Coal House overbridge would filter views of traffic and screen AGI.</p> <p><u>Viaduct option</u> – Planting on Allerdene Bridge embankment would partially soften the appearance on the structure but traffic on the section of the bridge on piers would remain clearly visible – Moderate adverse</p>	<p>Viaduct option –</p> <p>Slight adverse</p>	

No.	VP	Name	Location (grid ref)	Length of route affected	Minimum Distance to Scheme	Existing view Sensitivity	Change in view and Magnitude of Impact (Construction Winter Year 1 Summer Year 15)	Significance of Effects: Construction Winter year 1 Summer year 15	Notes: Nature/angle of view Screened/filtered Intrusive features Number & location of windows with view Scheme elements visible
							<p><u>Embankment option</u> – Planting on Allerdene Bridge embankment would soften the appearance of the landform and integrate it with adjacent areas of woodland, Allerdene Bridge would remain a perceptible change – Minor adverse</p>	<p>Embankment option - Neutral</p>	

Appendix E

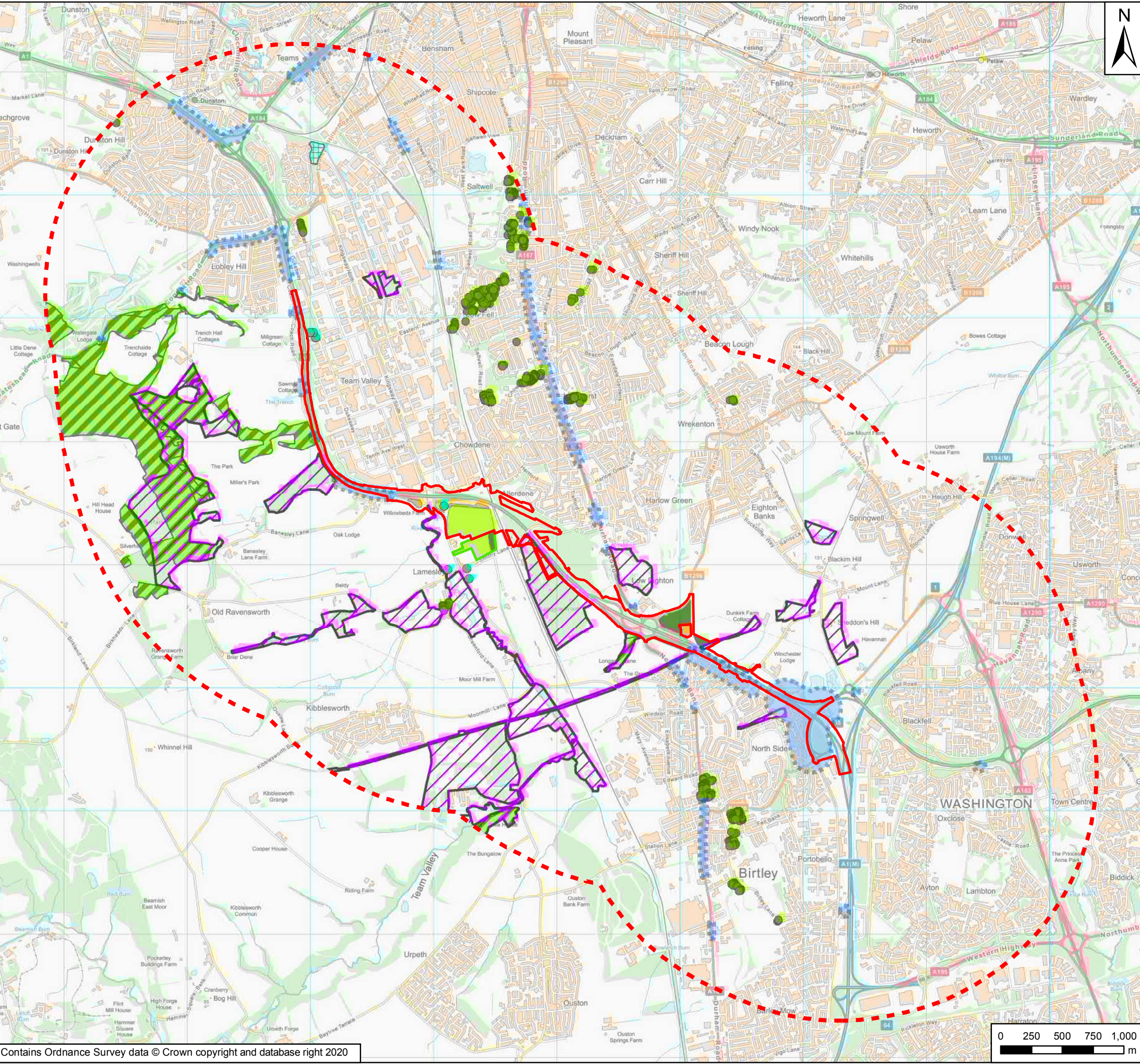
ES ADDENDUM FIGURES



Key

- Scheme Footprint
- Additional Land Area

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Rev	Date	Description	By	Chk'd	App'd
Suitability					Status
PINS Reference Number		TR010031			
Client					
Project Title					
A1 Birtley to Coal House Scheme					
Drawing Title					
Figure 1.1 Scheme Location Plan					
Scale	1:20,000	Drawn	GH	Checked	TB
Original Size	A3	Date	22/01/20	Date	22/01/20
Approved	KS	Date	22/01/20	Authorised	NJA
Drawing Number	HE551462	Originator	WSP	Volume	6.2
Revision	P01	PW Stage Code			
B2CH					
Section	Type	ID	Direction	Type	Role
					Number



Key

- Scheme Footprint
- Additional Land Area
- 2km Study Area
- Veteran Trees
- Tree Preservation Orders
- Noise Important Areas (NIA)
- Local Nature Reserve
- Local Wildlife Sites
- Ancient Woodland Inventory

Agricultural Land Classification

- Grade 3a
- Grade 3b
- Other Land Predominantly in Non-Agricultural Use

P02	20/04/20	Second Issue	GH	TB	NJA
P01	22/01/20	First Issue	GH	TB	NJA
Rev	Date	Description	By	Chk'd	App'd
Suitability					Status

PINS Reference Number **TR010031**



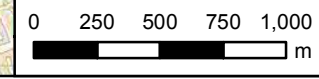
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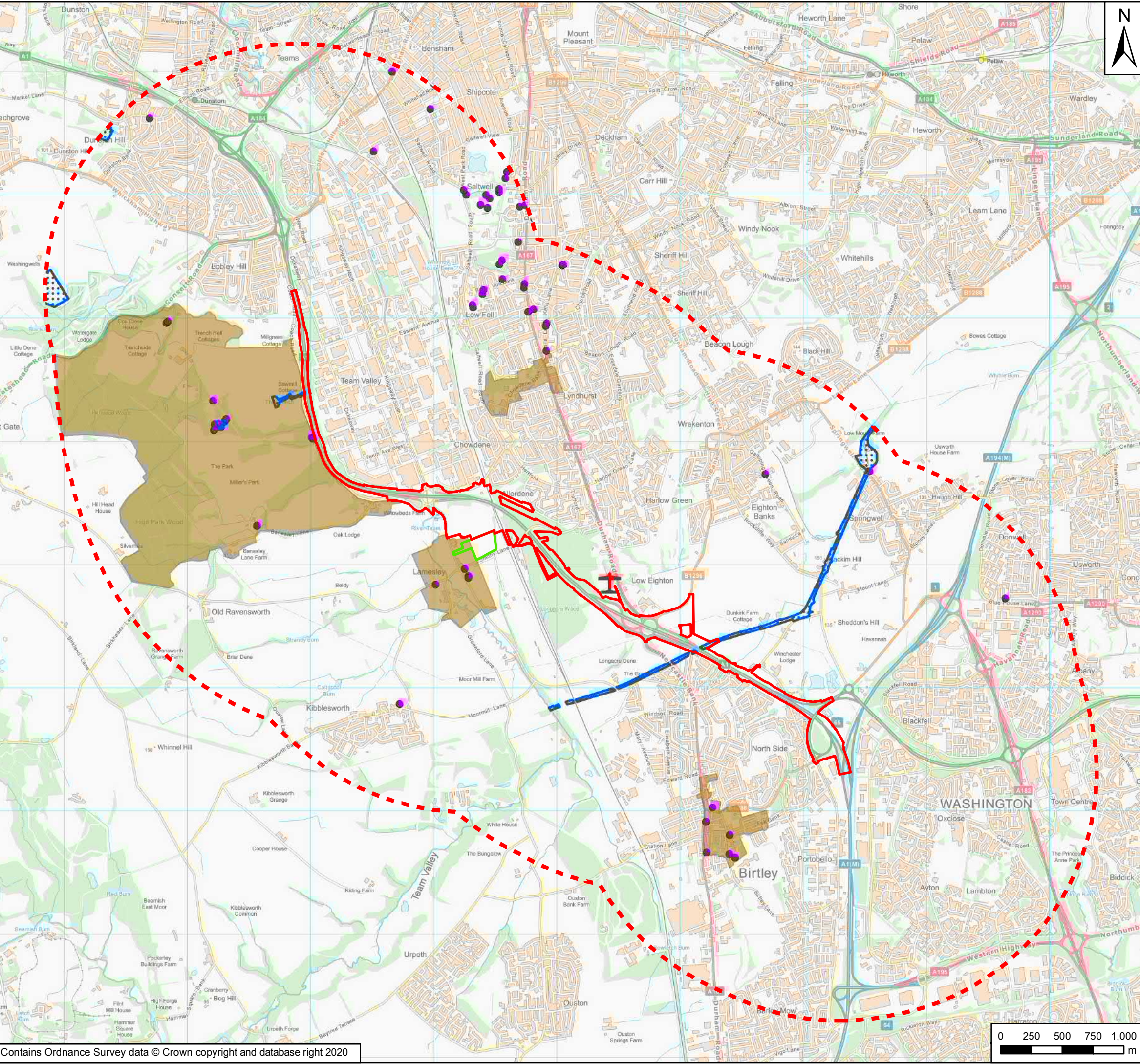
Drawing Title **Figure 2.2 Environmental Constraints Plan Page 1 of 4 Ecological and Environmental Constraints**

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Drawing Number	HE551462	Originator	WSP	Volume	6.2	Revision	P02
HE PIN						PW Stage Code	

Section	Type	ID	Direction	Type	Role	Number
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Key

- Scheme Footprint
- Additional Land Area
- 2km Study Area
- + Angel of the North
- Listed Building
- Scheduled Monument
- Conservation Areas

P02	20/04/20	Second Issue	GH	TB	NJA
P01	22/01/20	First Issue	GH	TB	NJA
Rev	Date	Description	By	Chk'd	App'd
Suitability: Suitable for Information					Status: S2

PINS Reference Number: TR010031

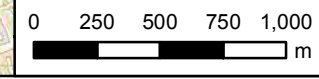
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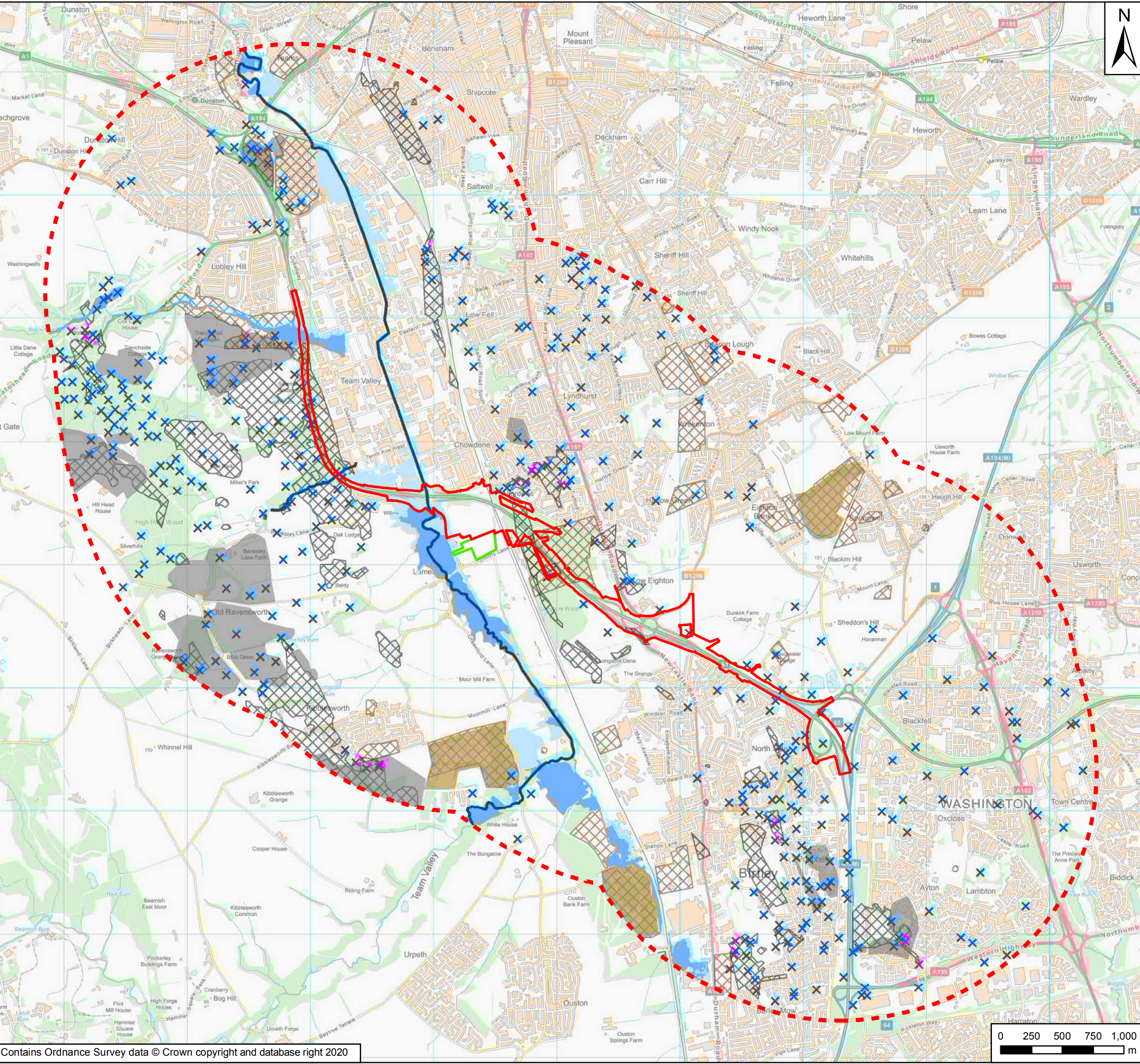
Project Title: A1 Birtley to Coal House Scheme

Drawing Title: Figure 2.2 Environmental Constraints Plan Page 2 of 4 Cultural Heritage Constraints

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PW Stage Code:				

B2CH	Section	Type	ID	Direction	Type	Role	Number
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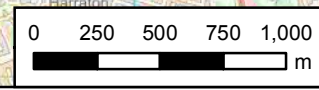
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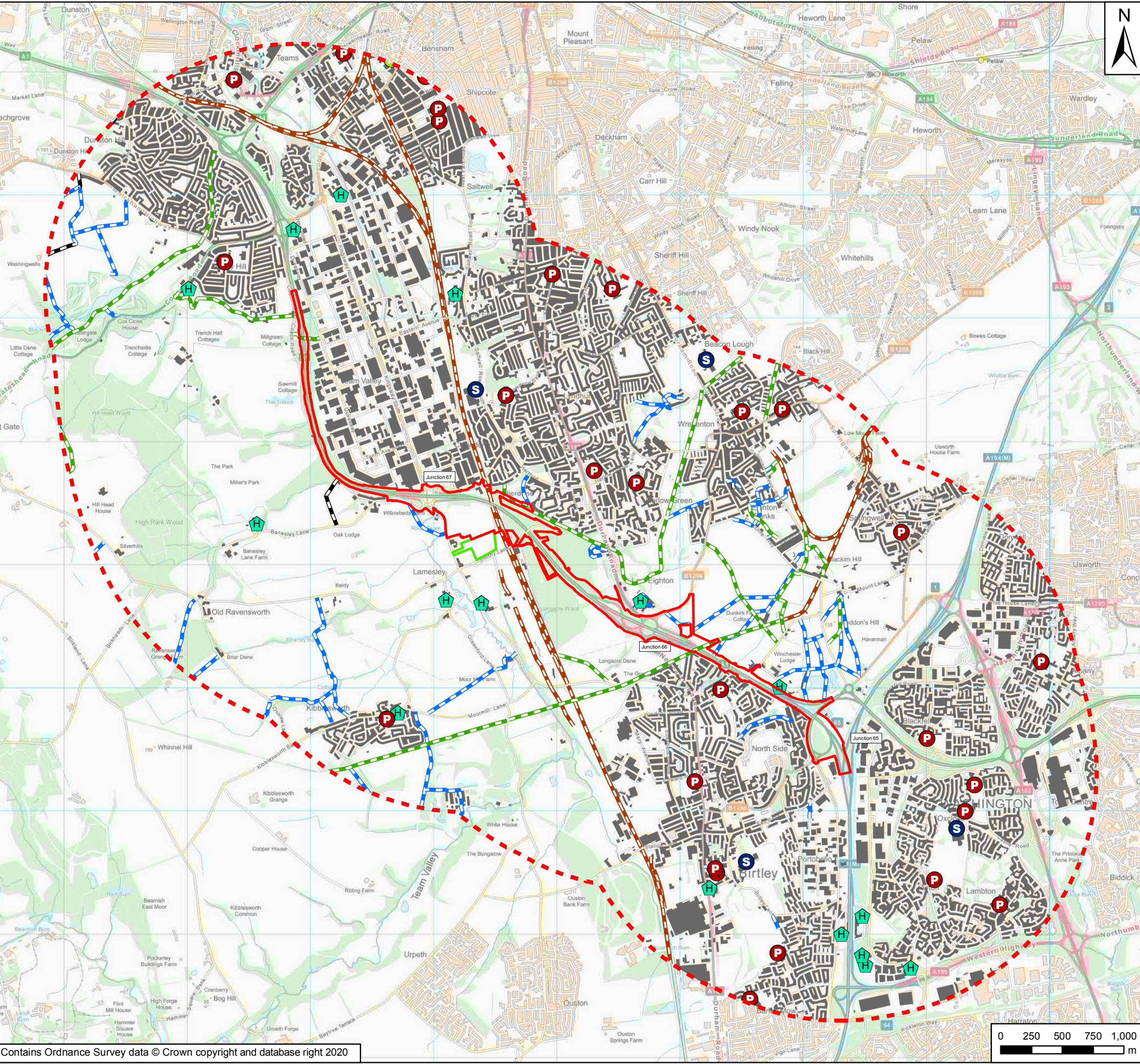
- Scheme Footprint
- Additional Land Area
- 2km Study Area
- X Adit
- X Shaft
- Statutory Main Rivers
- Flood Zone 2
- Flood Zone 3
- Historic Landfill
- Authorised Landfill
- Past Shallow Coal Mining Workings
- Surface Mining (Past and Present)

Rev	Date	Description	By	Chk'd	App'd
P02	20/04/20	Second Issue	GH	TB	NJA
P01	22/01/20	First Issue	GH	TB	NJA

Suitability		Status		
PINS Reference Number		TR010031		
Client				
Project Title		A1 Birtley to Coal House Scheme		
Drawing Title		Figure 2.2 Environmental Constraints Plan Page 3 of 4 Water Environment and Geological Constraints		

Scale	1:30,000	Drawn	GH	Checked	TB	Approved	KS	Authorised	NJA
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Drawing Number	HE551462	Originator	WSP	Volume	6.2	Revision	P02		
HE PIN		PW Stage Code							
B2CH	Section	Type	ID	Direction	Type	Role	Number		





Key

- Scheme Footprint
- Additional Land Area
- 2km Study Area
- N Nursery
- P Primary School
- S Secondary School
- H Hotels
- Bridleway
- Footpath
- Restricted Byway
- Railway Line
- Residential and Industrial Properties

P02	20/04/20	Second Issue	GH	TB	NJA		
P01	22/01/20	First Issue	GH	TB	NJA		
Rev	Date	Description	By	Chk'd	App'd		
Suitability						Status	

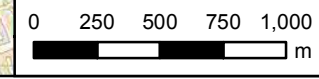
PINS Reference Number TR010031

Client

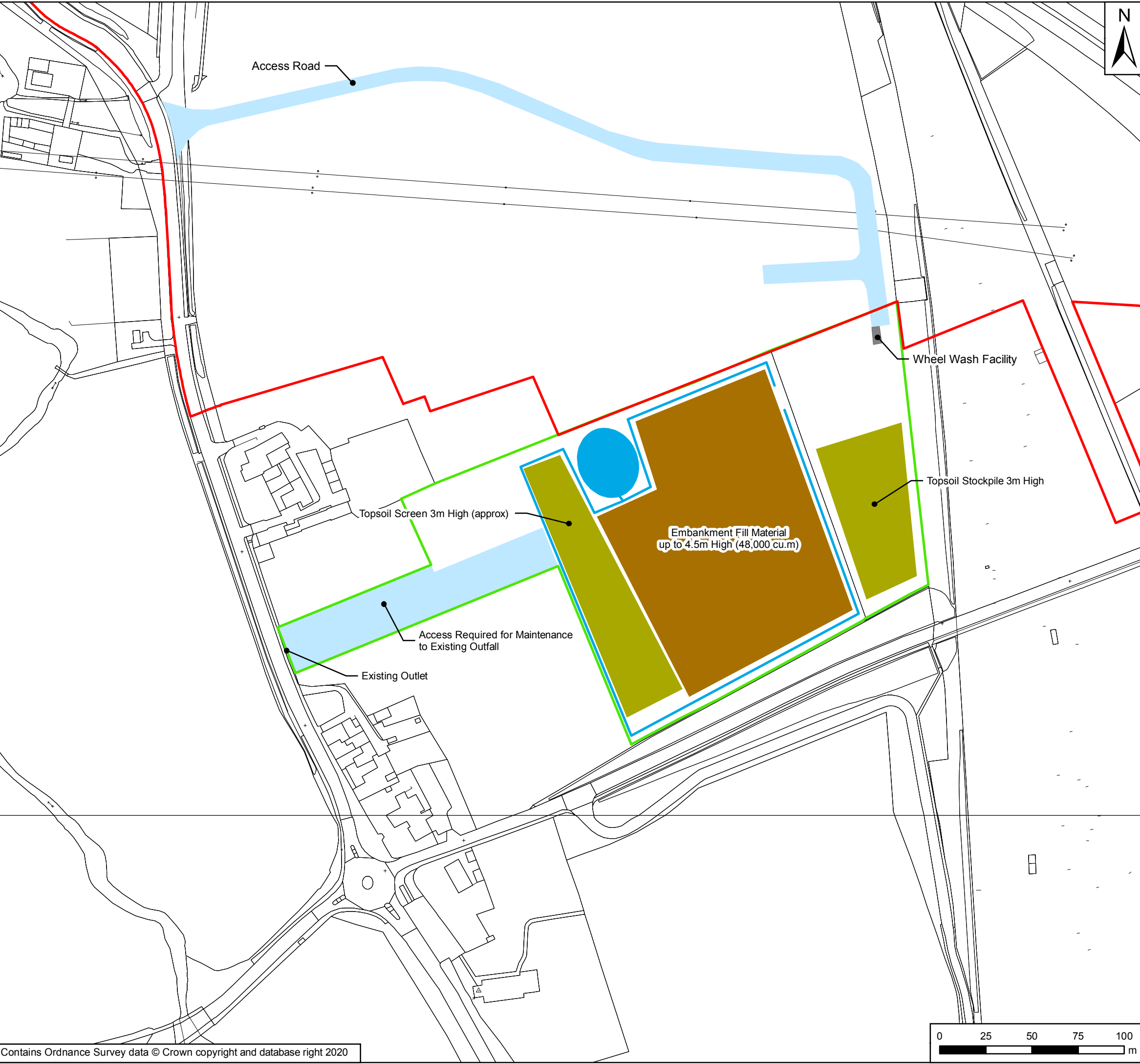
Project Title A1 Birtley to Coal House Scheme

Drawing Title Figure 2.2 Environmental Constraints Plan Page 4 of 4
Community and Recreational Constraints

Scale	1:30,000	Drawn	GH	Checked	TB	Approved	KS	Authorised	NJJA
Original Size	A3	Date	22/01/20	Date	22/01/20	Date	22/01/20	Date	22/01/20
Drawing Number	HE551462	Originator	WSP	Volume	6.2	Revision	P02		
HE PIN		PW Stage Code							



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 Document Path: \\uk.wsggroup.com\central\data\Projects\700419\A1\BCH PCF Stage 3 and 4\03 Shared\EI EIA and flood risk\01 Model\GIS\MXD\Environmental Statements\Addendum - Compound\Figure 2.3 - Additional Land - Indicative Site Layout.mxd



Key	
	Scheme Footprint
	Additional Land Area



Rev	Date	Description	By	Chk'd	App'd
P01	22/01/20	First Issue	GH	TB	NJA

PINS Reference Number: TR010031



Client: **highways england**

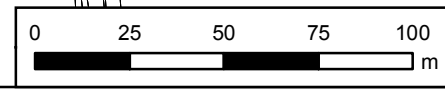
Project Title: **A1 Birtley to Coal House Scheme**

Drawing Title: **Figure 2.3 - Additional Land: Indicative Site Layout**

Scale	Drawn	Checked	Approved	Authorised
1:2,000	GH	TB	KS	NJA

Original Size	Date	Date	Date	Date
A3	22/01/20	22/01/20	22/01/20	22/01/20

Drawing Number	Originator	Volume	Revision
HE551462	WSP	6.2	P01



Appendix F

REGISTER OF ENVIRONMENTAL ACTIONS AND COMMITMENTS

Table 1-1 - Record of Environmental Actions and Commitments (REAC) below details the actions and commitments that have been identified to mitigate the environmental impacts as a result of the additional land. The actions and commitments within **Table 1-1** below are supplementary to those detailed within Table 3-1 - REAC of the Outline Construction Environmental Management Plan (CEMP) **[REP2-050]** and **[051]** a revised version of which was submitted at Deadline 4 should be read in conjunction with the Outline CEMP.

Table 1-1 – Register of Environmental Actions and Commitments

Ref	Action (Including Monitoring Requirements)	Objective	Source Reference	Organisation / Individual Delivering Measure	Achievement Criteria and Reporting Requirements	Project stage (Design, Pre-Construction, Construction, Operation)	Record of Completion (Signature and Date)
General							
AL G1	A 3m topsoil bund to the west of the additional land will be implemented, which will be seeded at the outset of the temporary works. The topsoil bund will comprise the first stockpiled material to be deposited and the last to be used so that it is effective for the lifetime of the additional land use.	To provide screening to properties to the West and South-West (R7 and R8, along Lamesley Road). To minimise impact on Local Wildlife Site and assume presence of roosting bats.	ES addendum: additional land; paragraph 4.9.1 ES Addendum: additional land, paragraph 5.8.2	Main Contractor	The CEMP will be approved by the SoS following consultation with the local authority and the Environment Agency. Reported on the Requirements Register published on Highways England's Scheme website. Site Environmental Inspection Reports.	Construction	
AL G2	The main contractor will site noise generating plant and equipment away from sensitive receptors to minimise noise levels.	To minimise noise levels in order to reduce impacts on biodiversity and other sensitive receptors.	ES Addendum: additional land, paragraph 5.8.2	Main Contractor	The CEMP will be approved by the SoS following consultation with the local authority and the Environment Agency. Reported on the Requirements Register published on Highways England's Scheme website. Site Environmental Inspection Reports. Noise monitoring records. Noise monitoring programme approved by the SoS following consultation with the local authority.	Construction	
AL G4	Land lost during construction for the additional land will be reinstated to its pre-existing condition (including all hedgerow loss).	To reverse the impacts on the setting of Lamesley Conservation Area and	ES addendum: additional land, paragraph 3.9.2	Main contractor	The CEMP will be approved by the SoS following consultation with the local	Operation	

Ref	Action (Including Monitoring Requirements)	Objective	Source Reference	Organisation / Individual Delivering Measure	Achievement Criteria and Reporting Requirements	Project stage (Design, Pre-Construction, Construction, Operation)	Record of Completion (Signature and Date)
		return the land to its original use and condition.	ES Addendum additional land, paragraph 5.8.1 ES Addendum: additional land, paragraph 6.9.2		authority and the Environment Agency Reported on the Requirements Register published on Highways England's Scheme website. Site Environmental Inspection Reports.		
Cultural Heritage							
AL CH1	The main contractor will undertake no intrusive groundwork within Lamesley Conservation Area.	To avoid impacts to any extant ridge and furrow earthworks within the Lamesley Conservation Area.	ES addendum: additional land, paragraph 3.9.3	Main contractor	The CEMP will be approved by the SoS following consultation with the local authority Reported on the Requirements Register published on Highways England's Scheme website Site Environmental Inspection Reports	Construction	
Landscape and Visual							
AL L1	The main contractor will ensure that the existing hedgerow within the additional land will be retained except for a 10 – 15m section that is required for access. This section will be replanted with transplants on reinstatement to replicate the section of hedgerow removed.	To safeguard the presence of existing landscape features that contribute to landscape character.	ES addendum: additional land, paragraph 4.9.1	Main Contractor	Landscape design approved by the SoS following consultation with the local authority The CEMP will be approved by the SoS following consultation with the local authority Reported on the Requirements Register	Construction	

Ref	Action (Including Monitoring Requirements)	Objective	Source Reference	Organisation / Individual Delivering Measure	Achievement Criteria and Reporting Requirements	Project stage (Design, Pre-Construction, Construction, Operation)	Record of Completion (Signature and Date)
					published on Highways England's Scheme website Site Environmental Inspection Reports Landscape as built drawings		
Population and Human Health							
AL PH1	The main contractor will minimise land take and will ensure that the remaining land area outside the additional land continues to be viable for keeping horses. This will be agreed through engagement with the landowner.	Minimise the impact on the economic viability of the land.	ES Addendum: additional land, paragraph 6.9.1	Main Contractor	The CEMP will be approved by the SoS following consultation with the local authority Reported on the Requirements Register published on Highways England's Scheme website Evidence of agreement with the land owner Site Environmental Inspection Reports	Design Construction	

Appendix G

WINTERING BIRDS REPORT

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APPENDICES

APPENDIX A

ADDITIONAL LAND: WINTERING BIRD SURVEY RESULTS

EXECUTIVE SUMMARY

WSP UK Ltd was commissioned by Highways England to undertake an additional wintering bird survey in January 2020 to support the construction of a temporary compound for the provision of enhancement works for the A1. The proposed compound lies to the north-east of the village of Lamesley, Gateshead, Tyne and Wear (central national grid reference NZ 25334 58123). The boundary of the land required for this compound has since been extended into an area directly adjacent to the original. Land within this extended boundary is hereafter referred to as 'the Site' and is shown in **Figure 1**.

In total, three wintering bird survey visits were undertaken, one during each month, February 2020 and March 2020. The surveys examined all habitat types within the Site.

A total of 25 species were recorded on or over the Site during the wintering bird surveys. Of these, nine species are species of conservation concern, one is listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended), three are Species of Principal Importance (SPI) under the Natural Environment and Rural Communities (NERC) Act 2006, four are Birds of Conservation Concern (BoCC) red list species and five are BoCC amber list species. Three species are also listed within the Durham Biodiversity Action Plan (DBAP)

The bird community within the Site during the winter period was varied. The majority of the assemblage was typical of lowland farmland. Wet, poor semi-improved grassland within the Site was identified as a foraging resource for many of the species of conservation concern including black-headed gull, kestrel, lapwing and starling. The high-water table within the Site provides damp, soft, invertebrate rich soils for the species identified above.

Boundary features such as hedgerows and scrub found on or directly adjacent to the Site were found to support species of conservation concern such as redwing. These habitats provide a foraging resource as well as areas of cover for birds to rest and potentially roost.

A full evaluation of the wintering bird assemblage and any subsequent recommendations as to how proposals should account for wintering birds in relation to relevant legislation and planning policy, as well as potential impacts to designated sites and subsequent recommendations, is made within the additional land addendum to the ES (**Doc Ref. HE551462-WSP-EGN-ZZ-RP-LE-00027**). This report informs that assessment.

1. INTRODUCTION

1.1. PROJECT BACKGROUND

- 1.1.1. WSP UK Ltd (WSP) was commissioned by Highways England to undertake a wintering bird survey on land north-east of the village of Lamesley, Gateshead, Tyne and Wear (central national grid reference NZ 25334 58123) for the A1 Birtley to Coal House Improvement Scheme (the Scheme). The area within the red Site boundary is shown on **Figure 1** and is hereafter referred to as 'the Site'. This report is provided in support of the 'Additional Land' Addendum to the Environmental Statement (ES) (Doc Ref. **HE551462-WSP-EGN-ZZ-RP-LE-00027**).
- 1.1.2. Under current proposals, a temporary construction compound and associated temporary works area is to be created within the Site (hereafter referred to as 'the temporary compound'). The temporary compound will be used for plant storage for the Scheme. The Scheme aims to increase capacity between junction 67 (Coal House) and junction 65 (Birtley). The existing road will be widened to provide a three-lane carriageway; additional lanes will be provided between junctions to help manage traffic joining and leaving the A1. The A1 lies approximately 35m from the northern boundary of the Site.

1.2. ECOLOGICAL BACKGROUND

- 1.2.1. A wintering bird survey was previously carried out on the land directly north of the boundary of this Site in 2018 and was subsequently reported on (**Document Ref. HE551462-WSP-EBD-ZZ-RP-LE-00009**). This report is provided as an addendum to the original to further inform the Scheme with regards to the additional land acquirement.
- 1.2.2. Aerial photography of the Site shows that it comprises a large grassland field, bounded by post and wire livestock fencing. This divides the northern boundary of the Site from the originally surveyed area, it also divides the western boundary from the main road directly adjacent to the Site. Broad-leaved, semi-natural woodlands form the eastern and southern boundaries of the Site. Further areas of grassland lie adjacent to the southern boundary of the Site, divided by livestock fencing. A house with stables and associated grassland lies adjacent to the south-western boundary of the Site.
- 1.2.3. To the east and south of the Site lies a mosaic of habitats dominated by arable and pastoral farmland. Land to the north and west of the Site is largely urban, dominated by the town of Gateshead.

1.3. BRIEF AND OBJECTIVES

- 1.3.1. To provide current baseline data regarding the bird community on the Site, WSP was commissioned to complete a wintering bird survey at the Site to:
- a.** Sample the bird activity within the Site to assess the wintering bird assemblage present;
 - b.** Evaluate the value of the Site for wintering birds;

- c.** Consider the implications of the compound on relevant legislation, planning policies and other factors such as the conservation status of birds wintering within the Site (where relevant); and
- d.** Make recommendations as to how proposals should account for wintering birds in relation to legislation, planning and biodiversity policy.

1.3.2. The results of the above survey are contained within this report.

2. METHODS

2.1. DESK STUDY

DESIGNATED SITES WITH BIRDS AS QUALIFYING FEATURES

- 2.1.1. An online desk study for information on European statutory sites of ornithological interest within 10km of the Site; and, information on national statutory sites of ornithological interest within 2km of the Site was undertaken. All information was obtained from:
- a. Nature on the Map /Multi Agency Geographical Information for the Countryside (MAGIC) website
(<http://www.natureonthemap.naturalengland.org.uk>).
 - b. Natural England website (<https://designatedsites.naturalengland.org.uk>).
- 2.1.2. Environmental Records Information Centre – North East was consulted in March 2018 to ascertain information on non- statutory sites of ornithological interest within 1km of the Site.
- 2.1.3. It should be noted that the records were obtained within proximity to the entirety of the former Scheme Footprint (at the time of the data search, 2018/19) and therefore may occur at greater distances from the Site than the search distances stated above. This has been considered within this report and only records within 2km of the Site have been considered relevant.
- 2.1.4. It is accepted that the desk study data search from 2018/19 is sufficient to inform this report.

PROTECTED AND/OR NOTABLE BIRD RECORDS

- 2.1.5. Environmental Records Information Centre – North East were also consulted in March 2018 to gain detailed local bird species records within 2km of the Site.

2.2. WINTERING BIRD SURVEY

- 2.2.1. To inform an evaluation of the on-site habitats for bird species, three wintering bird surveys on the Site were completed between February 2020 and March 2020 inclusive. The survey work followed a standard method based on the British Trust for Ornithology's (BTO) Common Bird Census, as summarised by Bibby et al. (2000).
- 2.2.2. All three survey visits to the Site were completed in the early morning, commencing at dawn. Each of the dawn survey visits was of approximately one hour in duration.
- 2.2.3. During each survey visit the Site was walked slowly, approaching all suitable habitat within 50m and visually scanning the habitat and listening for birds. In accordance with good practice guidance (Bibby et al, 2000) the start points and direction of the route walked were varied on each survey visit. This serves to minimise bias, as birds may be active at different times of day in different areas. The locations of birds seen and heard were mapped using standard BTO two letter codes and activity symbols.

2.3. DATES OF SURVEY AND PERSONNEL

- 2.3.1. The wintering bird survey visits were undertaken by a competent surveyor with five years' experience of ecological survey, including breeding bird surveys.
- 2.3.2. Dates of survey and weather conditions are given in **Table 2-1**.

Table 2-1 - Dates of Survey and Weather Conditions

Survey Visit	Date	Duration	Temp (°C)	Cloud Cover	Wind Speed	Wind Direction	Rain	Visibility
1	06.02.2020	1 hour	5	2	1	NE	None	Good
2	27.02.2020	1 hour	2	3	2	W	None	Good
3	10.03.2020	1 hour	11	6	5	SW	Light	Good

2.4. NOTES AND LIMITATIONS

- 2.4.1. Due to the timing of the commission, it was only possible to complete three out of the typical four wintering bird survey visits recommended by standard guidance (Gillings et al., 2008). However, taking into account the size of the Site as well as the habitat types present, it is considered that this reduced survey effort has not significantly impacted the assessment of the Site in relation to wintering birds.
- 2.4.2. Some bird species are more difficult to detect due to their shy or secretive nature and therefore may have gone undetected by this survey. As a constraint applicable to all bird surveys this is not considered to place significant limitation upon interpretation of the results for this Site.

3. RESULTS

3.1. DESK STUDY

STATUTORY SITES OF ORNITHOLOGICAL INTEREST

- 3.1.1. No statutory sites (local, national or international) of ornithological interest were identified within 2km of the Site.

NON-STATUTORY SITES OF ORNITHOLOGICAL INTEREST

- 3.1.2. A desk study identified five non-statutory sites of ornithological interest within 2km of the Site. A summary of the features of ornithological interest and the distance from the closest point of the Site boundary are listed in **Table 3-1** below. Relevant legislative and policy context is given in Section 4 below.

Table 3-1 - Non-Statutory Sites with 2km of the Site

Site Name	Designation	Size (ha)	Distance and orientation from Site	Description
Lamesley Meadows	Gateshead LWS	20	0.08km south-west	A site containing permanent pasture, riverbank, ponds and reed beds. The site supports breeding waders such as lapwing <i>Vanellus vanellus</i> , redshank <i>Tringa tetanus</i> and snipe <i>Gallinago gallinago</i> . Otter <i>Lutra lutra</i> have also occasionally been recorded in the River Team.
Hagg Wood / Gill and Mitcheson's Gill	Gateshead LWS	5	0.9km south-west	The site supports semi-natural woodland and scrub, supporting breeding birds that include spotted flycatcher <i>Muscicapa striata</i> , hedge sparrow and song thrush. Badger are also regularly present.
Long Acre Dene	Gateshead LWS	2	1.1km south-east	An area of ancient semi-natural woodland in the valley of the River Team. The site is noted for its bird assemblage, including breeding hedge sparrow and song thrush, and frequent presence of hedgehog.
Bowes Valley Nature Reserve	Gateshead LWS	31	1.2km south-west	Most of the site consists of grasslands, sown with wild-flower mixes, which have established quite

Site Name	Designation	Size (ha)	Distance and orientation from Site	Description
				successfully and support butterfly populations of importance (grayling <i>Hipparchia Semele</i> and dingy skipper <i>Erynnis tages</i>). The site contains two ponds that support populations of common amphibians. The breeding bird assemblage contains a variety of birds with little ringed plover <i>Charadrius dubius</i> of particular interest (Schedule 1 species, WCA 1981 (as amended)).
Dunkirk Farm West	Gateshead LWS	1	1.8km south-east	The site includes grazed paddock and a disused wagon way (an extension of the Bowes Railway Line LWS). The site is noted for its breeding dunnock <i>Prunella modularis</i> and song thrush <i>Turdus philomelos</i> , and frequent presence of hedgehog <i>Erinaceus europaeus</i> . This site also represents a wildlife corridor crossed by the Scheme.

PROTECTED AND/OR NOTABLE SPECIES

- 3.1.3. The desk study identified several records of 41 protected and/or notable bird species within 2km of the Site boundary with potential for them to occur within the Site between November and February. These are summarised in **Table 3-2** below showing the species records and their protected status.

Table 3-2 - Protected and/or notable species within 2km of the Site

Common Name	Scientific Name	Schedule 1	Section 41	Red List	Amber List	DBAP	Number of records within 2 km of the Site
Bewick's swan	<i>Cygnus columbianus</i>	✓	✓		✓		13

Common Name	Scientific Name	Schedule 1	Section 41	Red List	Amber List	DBAP	Number of records within 2 km of the Site
	<i>bewickii</i>						
Black-headed gull	<i>Chroicocephalus ridibundus</i>				✓		198
Bullfinch	<i>Pyrrhula pyrrhula</i>		✓		✓		12
Common gull	<i>Larus canus</i>				✓		38
Curlew	<i>Numenius arquata</i>		✓	✓		✓	176
Dunlin	<i>Calidris alpina</i>				✓	✓	3
Dunnock	<i>Prunella modularis</i>		✓		✓		196
Fieldfare	<i>Turdus pilaris</i>	✓		✓			59
Greater black-backed gull	<i>Larus marinus</i>				✓		18
White-fronted goose	<i>Anser albifrons</i>		✓	✓			2
Green sandpiper	<i>Tringa ochropus</i>	✓			✓		3
Grey partridge	<i>Perdix perdix</i>		✓	✓			2
Grey wagtail	<i>Motacilla cinerea</i>			✓			7
Greylag goose	<i>Anser anser</i>				✓		193
Herring gull	<i>Larus argentatus</i>		✓	✓			192
House sparrow	<i>Passer domesticus</i>		✓	✓		✓	229

Common Name	Scientific Name	Schedule 1	Section 41	Red List	Amber List	DBAP	Number of records within 2 km of the Site
Kestrel	<i>Falco tinnunculus</i>				✓		178
Lapwing	<i>Vanellus vanellus</i>		✓	✓		✓	184
Lesser black-backed gull	<i>Larus fuscus</i>				✓		79
Linnet	<i>Linaria cannabina</i>		✓	✓		✓	36
Mallard	<i>Anas platyrhynchos</i>				✓		219
Meadow pipit	<i>Anthus pratensis</i>				✓		39
Mediterranean gull	<i>Larus melanocephalus</i>	✓			✓		1
Mistle thrush	<i>Turdus viscivorus</i>			✓			63
Mute swan	<i>Cygnus olor</i>				✓		56
Oystercatcher	<i>Haematopus ostralegus</i>				✓		63
Peregrine	<i>Falco peregrinus</i>	✓				✓	5
Pink-footed goose	<i>Anser brachyrhynchus</i>				✓		22
Red kite	<i>Milvus milvus</i>	✓					21
Redshank	<i>Tringa tetanus</i>				✓	✓	79
Redwing	<i>Turdus iliacus</i>	✓		✓			70
Reed bunting	<i>Emberiza schoeniclus</i>		✓		✓	✓	37

Common Name	Scientific Name	Schedule 1	Section 41	Red List	Amber List	DBAP	Number of records within 2 km of the Site
Shelduck	<i>Tadorna tadorna</i>				✓		87
Skylark	<i>Alauda arvensis</i>		✓	✓		✓	2
Snipe	<i>Gallinago gallinago</i>				✓	✓	65
Song thrush	<i>Turdus philomelos</i>		✓	✓		✓	40
Starling	<i>Sturnus vulgaris</i>		✓	✓		✓	222
Stock dove	<i>Columba oenas</i>				✓		63
Tree sparrow	<i>Passer montanus</i>		✓	✓		✓	177
Whooper swan	<i>Cygnus Cygnus</i>	✓			✓		1
Willow tit	<i>Poecile montana</i>		✓	✓			42

3.2. WINTERING BIRD SURVEY

RESULTS OF WINTERING BIRD SURVEY

- 3.2.1. A total of 25 species were recorded on or over the Site during the wintering bird surveys. This included nine species which are legally protected or species of conservation concern. A total of 25 species were recorded within the red line boundary and using the Site, with six of these species considered to be winter visitors to the Site.
- 3.2.2. The numbers of birds recorded within each category are listed below, it should be noted categories are not exclusive and a species can be listed in more than one conservation category (for example listed as both SPI and UK BAP species and as either a red or amber list BoCC). The number recorded were:
- a. One species listed under Schedule 1 of the WCA 1981 (as amended): redwing;
 - b. Three species listed as SPI: herring gull, lapwing and starling;
 - c. Four BoCC red list species: herring gull, lapwing, redwing and starling; and

d. Five BoCC amber list species: black-headed gull, common gull, greylag goose, kestrel and lesser black-backed gull.

3.2.3. These species are listed in **Table 3-3** below along with a description of their abundance and location/s on the Site during the survey visits. Species counts and distributions throughout all three survey visits are shown in **Figures 2–4**. A full list of birds recorded on Site, including those with no special legal protection or conservation concern, is shown in **Appendix A**.

Table 3-3 - Evaluation Results of Protected and/or Notable Species Recorded on or over the Site

Common Name	Latin Name	Schedule 1	Section 41	Red list	Amber list	DBAP	Peak Count	Description of Species Activity, Location/s within the Survey Area and Site where Applicable
Black-headed gull	<i>Chroicocephalus ridibundus</i>				✓		7	Recorded loafing and feeding on the grassland within the Site as well as flying over the Site.
Common gull	<i>Larus canus</i>				✓		3	Recorded flying over the Site.
Greylag goose	<i>Anser anser</i>				✓		20	Recorded flying over the northern boundary of the Site. Believed to be Icelandic in origin.
Herring gull	<i>Larus argentatus</i>		✓	✓			1	Single birds recorded flying over the Site.
Kestrel	<i>Falco tinnunculus</i>				✓	✓	1	Single male recorded hunting over the Site as well as perching on pylons to the north of the Site.
Lapwing	<i>Vanellus vanellus</i>		✓	✓		✓	80	Birds recorded flying over the Site from Lamesley Meadows LWS.
Lesser Black-backed gull	<i>Larus fuscus</i>				✓		1	Single birds recorded flying over the Site.

Common Name	Latin Name	Schedule 1	Section 41	Red list	Amber list	DBAP	Peak Count	Description of Species Activity, Location/s within the Survey Area and Site where Applicable
Redwing	<i>Turdus iliacus</i>	✓		✓			50	Single birds foraging on grassland within the south-western corner of the Site in February, large flock recorded flying over the Site in March.
Starling	<i>Sturnus vulgaris</i>		✓	✓		✓	10	Birds recorded foraging on grassland both on and adjacent to the site in February and March.

4. LEGISLATIVE AND CONSERVATION CONTEXT

CONSERVATION OF HABITATS AND SPECIES REGULATIONS 2017 (AS AMENDED) (HABITATS REGULATIONS)¹

- 4.1.1. The Habitats Regulations Part 1 Regulation 10 (2) & (3) state that local authorities ‘*must take such steps in the exercise of their functions as they consider appropriate to contribute to...the preservation, maintenance and re-establishment of a sufficient diversity and area of habitat for wild birds in the UK including by means of the upkeep, management and creation of such habitat...*’. The legislation continues to state that economic and recreation requirements must be taken into consideration in considering which measures are appropriate.

WILDLIFE AND COUNTRYSIDE ACT 1981 (AS AMENDED)

- 4.1.2. Under the Wildlife and Countryside Act 1981 (as amended) all wild birds are protected from being killed and injured, and their nests and eggs protected from taking, damage and destruction whilst in use; therefore, recommendations to avoid contravention of this legislation are included within Section 5.
- 4.1.3. Additional protection is extended to species listed under Schedule 1 of the Act, meaning it is also an offence to disturb these species at or near the nest, or whilst they have dependent young.
- 4.1.4. The only Schedule 1 listed species recorded within the Site was redwing, however this species does not breed in England and this additional protection is only applicable upon nesting birds.

NATURAL ENVIRONMENT AND RURAL COMMUNITIES ACT 2006

- 4.1.5. The NERC Act 2006 reinforces the duty upon all public authorities, including planning authorities, to have regard for the conservation of biodiversity when discharging their duties. The Act refines the definition of biodiversity conservation, stating that it includes restoring or enhancing a population or habitat. Section 41 of the SPI Act requires the Secretary of State to list Habitats and Species of Principal Importance (HPIs and SPIs) for the conservation of biodiversity in England. Three bird species listed as SPI’s in accordance with Section 41 were recorded on or over the Site; namely herring gull, lapwing, and starling.

4.2. PLANNING POLICY

NATIONAL PLANNING POLICY FRAMEWORK

- 4.2.1. At a national context planning policy is driven by the National Planning Policy Framework (NPPF) (2019). The NPPF sets out, amongst other points, how at an overview level the ‘*planning system should contribute to and enhance the national and local environment by:*

¹ This legislation may be subject to change in 2021 after the UK’s exit from the European Union.

*...recognising the wider benefits of ecosystem services;
minimising impacts on biodiversity and providing net gains in biodiversity where possible,
contributing to the Government's commitment to halt the overall decline in biodiversity,
including by establishing coherent ecological networks that are more resilient to current
and future pressures...'*

4.2.2. The NPPF states that this should be achieved through local planning development frameworks and gives recommendations for criteria based policies which recognise the hierarchy of designated sites which range from internationally important habitat, to sites of importance at a local level and ensure that protection is *'commensurate with their status and gives appropriate weight to their importance and the contribution that they make to wider ecological networks.'*

4.2.3. A list of principles which local planning authorities should follow when determining planning applications is included in the NPPF which includes the following:

'if significant harm resulting from a development cannot be avoided...adequately mitigated, or, as last resort, compensated for, then planning permission should be refused;

...opportunities to incorporate biodiversity in and around developments should be encouraged;

planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland...unless the need for, and benefits of, the development in that location clearly outweigh the loss...'

4.2.4. Although the NPPF revoked Planning Policy Statement 9 (PPS9), the ODPM circular 06/2005 originally prepared to accompany PPS9 remains current; this states that *'the presence of a protected species is a material consideration when a planning authority is considering a development proposal'* and also includes confirmation that *'potential effects of a development, on habitats or species listed as priorities in the UK Biodiversity Action Plan (BAP)...are capable of being a material consideration in the...making of planning decisions.'* The circular advises that local authorities should consult Natural England before granting planning permission if the proposals could adversely affect a protected species, this definition of a protected species includes birds.

PLANNING FOR THE FUTURE – CORE STRATEGY AND URBAN CORE PLAN FOR GATESHEAD AND NEWCASTLE UPON TYNE, 2010-2030

4.2.5. At a local level, planning policy comprises the Core Strategy and Urban Core Plan for Gateshead and Newcastle Upon Tyne, 2010-2030 (adopted March 2015). Local planning policy of ornithological interest centres on *'Policy CS18 Green Infrastructure and the Natural Environment'*. This document states that: *'Policy CS18 intends to protect and enhance our Green Infrastructure Network and natural environment. This includes... the conservation and enhancement of biodiversity...Building design can also incorporate features that make an important contribution to conserving and enhancing biodiversity.'*

Policy CS18 states that ‘A high quality and comprehensive framework of interconnected green infrastructure that offers ease of movement and an appealing natural environment for people and wildlife will be achieved by:

1. *Maintaining, protecting and enhancing the integrity, connectivity, multifunctionality and accessibility of the Strategic Green Infrastructure Network*
2. *Protection, enhancement and management of green infrastructure assets which include:*
 - I. *Biodiversity and geodiversity assets, including designated sites, designated wildlife corridors and priority habitats and species,*
 - II. *Distinctive landscape character, recognising the particular importance of our rivers and topography, and*
 - III. *Trees, woodland and hedgerows.*
3. *Addressing gaps in the network and making improvements in Opportunity Areas.*
4. *Improving and extending linkages to and within the Strategic Green Infrastructure Network.*
5. *Protecting and enhancing open spaces, sport and recreational facilities in accordance with agreed standards in line with National Policy.*
6. *Improving access to, along and onto the River Tyne and tributaries, without adversely impacting on the local ecology or damaging the river banks’*

4.3. OTHER CONSIDERATIONS

BIRDS OF CONSERVATION CONCERN RED AND AMBER LISTS

- 4.3.1. The UK’s leading bird conservation organisations reviewed the most up to date information on the status of birds in the UK and elsewhere in their range to produce the third review of the status of birds which occur regularly in the UK. This is presented as the Birds of Conservation Concern 4 (Eaton *et al*, 2015), comprising a ‘red list’ of species of high conservation concern, an ‘amber’ list of species of moderate conservation concern, with other species that do not qualify under red or amber list criteria on the green list. To qualify on the red list species may be listed as globally threatened by IUCN, have suffered a historical decline without substantial recent recovery, or a decline of more than 50% in breeding or non-breeding populations, or a 50% contraction in breeding range over 25 years (or the longer term). Amber list species can be those listed as Species of European Conservation Concern, those which have suffered a historical decline but shown significant recent recovery, have shown a decline of between 25 and 50% in breeding or non-breeding populations, or a contraction in breeding range of between 25 and 50% over 25 years (or the longer term) or be rare or localised breeders in the UK, or be species for which 20% of the breeding or non-breeding population is found in the UK.

- 4.3.2. Red or amber listing does not confer additional protection under legislation or planning policy, however, it provides a basis for informing evaluation of a Site and for targeting conservation effort and is a widely used resource for interpreting bird populations.

DURHAM BIODIVERSITY ACTION PLAN

- 4.3.3. The Durham Biodiversity Action Plan (DBAP) (2007) was developed by Durham Biodiversity Partnership and is now under the custody of the North-East England Nature Partnership. This document identifies habitats and species of particular value or concern at the local level.

5. DISCUSSION AND RECOMMENDATIONS

- 5.1.1. A full evaluation of the wintering bird assemblage and any subsequent recommendations as to how proposals should account for wintering birds in relation to relevant legislation and planning policy, as well as potential impacts to designated sites and subsequent recommendations, will be made within the additional land addendum to the ES (**Doc Ref. HE551462-WSP-EGN-ZZ-RP-LE-00027**).

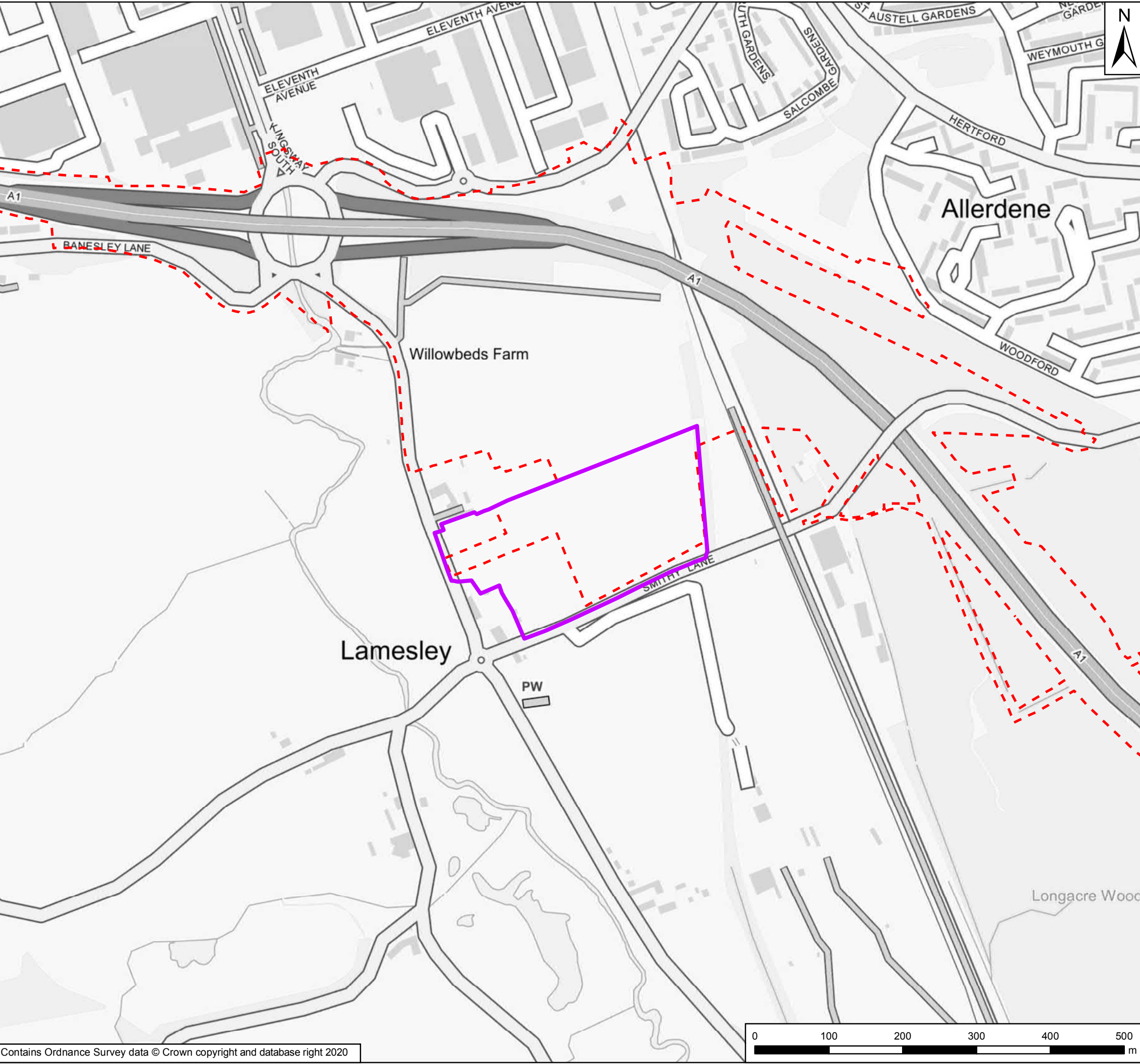
6. CONCLUSIONS

- 6.1.1. A total of 25 species were recorded on or over the Site during the wintering bird surveys. This included nine species which are legally protected or species of conservation concern. It should be noted that the categories are not exclusive, and a species can be listed in more than one conservation category (for example, listed as an SPI and as either a red or amber list BoCC).
- 6.1.2. The number of birds recorded on or over the Site, within each category is summarised below:
- a. One species listed under Schedule 1 of the WCA 1981 (as amended): redwing;
 - b. Three species listed as SPI: herring gull, lapwing and starling;
 - c. Four BoCC red list species: herring gull, lapwing, redwing and starling; and
 - d. Five BoCC amber list species: black-headed gull, kestrel, lesser black-backed gull, common gull and greylag goose.
- 6.1.3. The construction and operational impacts of the Scheme with respect to the Site, including impacts on wintering birds, will be fully assessed and presented within the additional land addendum report to the ES (**Doc Ref. HE551462-WSP-EGN-ZZ-RP-LE-00027**), which will also verify the suitability of proposed mitigation and compensation detailed in **Chapter 8: Biodiversity**.

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- HMSO (2006) Natural Environment and Rural Communities Act.
- HMSO (2017) Conservation of Habitats and Species Regulations 2017.
- Office of the Deputy Prime Minister (ODPM) (2005). Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and their Impacts within the Planning System.
- The UK Biodiversity Action Plan; available online: <http://jncc.defra.gov.uk/page-5155>

Figure 1 - Site Location Plan



Key
 Scheme Footprint
 Survey Area

P01	Mar 2020	First Issue	GH	JF	NJA
Rev	Date	Description	By	Chk'd	App'd
Suitability				Status	
PINS Reference Number		TR010031			
Project Title A1 Birtley to Coal House Scheme					
Drawing Title Figure 1 - Site Location Plan					
Scale 1:5,000	Drawn JR	Checked JF	Approved KS	Authorised NJJA	
Original Size A3	Date Mar 2020	Date Mar 2020	Date Mar 2020	Date Mar 2020	
Drawing Number HE551462		Originator WSP	Volume 6.2	Revision P01	
PW Stage Code					
B2CH					
Section	Type	ID	Direction	Type	Role Number

Figure 2 - Survey Visit 1



Key

- Scheme Footprint
- Survey Area
- Transect

BoCC List Categories

- None BoCC species
- Amber List species
- Red List species

P01	Mar 2020	First Issue	GH	JF	NJA
Rev	Date	Description	By	Chk'd	App'd
Suitability				Status	

PINS Reference Number **TR010031**



Project Title **A1 Birtley to Coal House Scheme**

Drawing Title **Figure 2 - Survey Visit 1**

Scale	Drawn	Checked	Approved	Authorised
1:1,500	JR	JF	KS	NJA
Original Size	Date	Date	Date	Date
A3	Mar 2020	Mar 2020	Mar 2020	Mar 2020

Drawing Number	Originator	Volume	Revision
HE551462	WSP	6.2	P01
PW Stage Code			

B2CH						
Section	Type	ID	Direction	Type	Role	Number

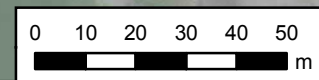


Figure 3 - Survey Visit 2



Key

- Scheme Footprint
- Survey Area
- Transect

BoCC List Categories

- None BoCC species
- Amber List species
- Red List species

P01	Mar 2020	First Issue	GH	JF	NJA
Rev	Date	Description	By	Chk'd	App'd
Suitability				Status	

PINS Reference Number: TR010031



Project Title: A1 Birtley to Coal House Scheme

Drawing Title: Figure 3 - Survey Visit 2

Scale	1:1,500	Drawn	JR	Checked	JF	Approved	KS	Authorised	NJA
Original Size	A3	Date	Mar 2020	Date	Mar 2020	Date	Mar 2020	Date	Mar 2020
Drawing Number	HE551462	Originator	WSP	Volume	6.2	Revision		P01	
B2CH							PW Stage Code		
Section	Type	ID	Direction	Type	Role	Number			

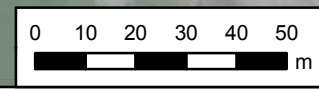


Figure 4 - Survey Visit 3



Key

- Scheme Footprint
- Survey Area
- Transect

BoCC List, Visit

- None BoCC List species
- Amber BoCC List species
- Red BoCC List species

P01	Mar 2020	First Issue	GH	JF	NJA
Rev	Date	Description	By	Chk'd	App'd
Suitability				Status	

PINS Reference Number **TR010031**

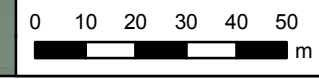


Project Title **A1 Birtley to Coal House Scheme**

Drawing Title

Figure 4 - Survey Visit 3

Scale	1:1,500	Drawn	JR	Checked	JF	Approved	KS	Authorised	NJA
Original Size	A3	Date	Mar 2020	Date	Mar 2020	Date	Mar 2020	Date	Mar 2020
Drawing Number	HE551462	Originator	WSP	Volume	6.2	Revision		P01	
B2CH								PW Stage Code	
Section	Type	ID	Direction	Type	Role	Number			



Appendix A

ADDITIONAL LAND: WINTERING BIRD SURVEY RESULTS

Visit 1 – 06.02.2020

BTO Code	Common Name	Scientific Name	BoC C	S4 1	Sch 1	No. Of Records
GR	Greenfinch	<i>Chloris chloris</i>				2
BT	Blue Tit	<i>Cyanistes caeruleus</i>				2
R.	Robin	<i>Erithacus rubecula</i>				5
BH	Black-headed Gull	<i>Chroicocephalus ridibundus</i>	Amb er			1
GO	Goldfinch	<i>Carduelis carduelis</i>				2
CH	Chaffinch	<i>Fringilla coelebs</i>				1
MG	Magpie	<i>Pica pica</i>				1
B.	Blackbird	<i>Turdus merula</i>				3
WP	Woodpigeon	<i>Columba palumbus</i>				4
LT	Long-tailed Tit	<i>Aegithalos caudatus</i>				1
GT	Great Tit	<i>Parus major</i>				4
WR	Wren	<i>Troglodytes troglodytes</i>				2
HG	Herring Gull	<i>Larus argentatus</i>	Red	Ye s		1
JD	Jackdaw	<i>Coloeus monedula</i>				2
BZ	Buzzard	<i>Buteo buteo</i>				1
WR	Wren	<i>Troglodytes troglodytes</i>				1
C.	Carrion Crow	<i>Corvus corone</i>				1
CG	Canada Goose	<i>Branta canadensis</i>				2

BTO Code	Common Name	Scientific Name	BoC C	S4 1	Sch 1	No. Of Records
JD	Jackdaw	<i>Coloeus monedula</i>				2
CM	Common Gull	<i>Larus canus</i>	Amber			3
LB	Lesser Black-backed Gull	<i>Larus fuscus</i>	Amber			1
GT	Great Tit	<i>Parus major</i>				1
L.	Lapwing	<i>Vanellus vanellus</i>	Red	Yes		1
C.	Carrion Crow	<i>Corvus corone</i>				3

Visit 2 – 27.02.2020

BTO Code	Common Name	Scientific Name	BoCC	S41	Sch1	No. of Records
R.	Robin	<i>Erithacus rubecula</i>	0	0	0	1
CH	Chaffinch	<i>Fringilla coelebs</i>	0	0	0	1
JD	Jackdaw	<i>Coloeus monedula</i>	0	0	0	6
C.	Carrion Crow	<i>Corvus corone</i>	0	0	0	5
WP	Woodpigeon	<i>Columba palumbus</i>	0	0	0	13
HG	Herring Gull	<i>Larus argentatus</i>	Red	Yes	0	2
L.	Lapwing	<i>Vanellus vanellus</i>	Red	Yes	0	1
BH	Black-headed Gull	<i>Chroicocephalus ridibundus</i>	Amber	0	0	2
MG	Magpie	<i>Pica pica</i>	0	0	0	3
K.	Kestrel	<i>Falco tinnunculus</i>	Amber	0	0	1
WR	Wren	<i>Troglodytes troglodytes</i>	0	0	0	2
SH	Sparrowhawk	<i>Accipiter nisus</i>	0	0	0	1
B.	Blackbird	<i>Turdus merula</i>	0	0	0	1
BT	Blue Tit	<i>Cyanistes caeruleus</i>	0	0	0	1

Visit 3 – 10.03.2020

BTO Code	Common Name	Scientific Name	BoCC	S41	Sch1	Observations
HG	Herring Gull	<i>Larus argentatus</i>	Red	Yes	0	1
GO	Goldfinch	<i>Carduelis carduelis</i>	0	0	0	2
JD	Jackdaw	<i>Coloeus monedula</i>	0	0	0	5
GJ	Greylag Goose	<i>Anser anser</i>	Amber	0	0	6
LB	Lesser Black-backed Gull	<i>Larus fuscus</i>	Amber	0	0	2
MG	Magpie	<i>Pica pica</i>	0	0	0	1
BH	Black-headed Gull	<i>Chroicocephalus ridibundus</i>	Amber	0	0	1
SG	Starling	<i>Sturnus vulgaris</i>	Red	Yes	0	3
WP	Woodpigeon	<i>Columba palumbus</i>	0	0	0	4
RE	Redwing	<i>Turdus iliacus</i>	Red	0	Yes	2
C.	Carrion Crow	<i>Corvus corone</i>	0	0	0	1
K.	Kestrel	<i>Falco tinnunculus</i>	Amber	0	0	1
R.	Robin	<i>Erithacus rubecula</i>	0	0	0	1
CH	Chaffinch	<i>Fringilla coelebs</i>	0	0	Yes	1
BT	Blue Tit	<i>Cyanistes caeruleus</i>	0	0	0	2
LT	Long-tailed Tit	<i>Aegithalos caudatus</i>	0	0	0	1



Appendix H

ARBORICULTURAL REPORT

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APPENDIX C

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APPENDIX D

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APPENDIX E

TREE PROTECTION PLAN

1 INTRODUCTION

- 1.1.1. WSP has been instructed by the Highways England to undertake a tree survey and to subsequently provide an Arboricultural Report for land at Lamesley, Gateshead roughly centred on grid ref NZ 25310 58125 (hereafter referred to as 'the Site').
- 1.1.2. The purpose of this report is to identify all trees which may reasonably be affected by the proposed scheme, to assess the direct and indirect impact of the scheme upon those trees and to recommend further works that may be required to ensure the long term retention of valuable trees during detailed design, construction and operation.
- 1.1.3. The scope and level of detail included within this report is commensurate with that required for the adequate consideration of arboricultural features as part of an outline design. Information provided complies with the requirements of British Standard BS 5837 *Trees in relation to design, demolition and construction – Recommendation* (BS 5837) Table B.1 and includes reference to the following:
- i Tree survey;
 - i Arboricultural impact assessment;
 - i Arboricultural method statement (heads of terms); and
 - i Tree protection plan.

1.2 VALIDITY PERIOD

- 1.2.1. Trees are dynamic organisms which are influenced by a variety of environmental variables and whose health and condition can rapidly change. Because of this any recommendations made within this report are valid for a period of 24 months from the date of issue.

1.3 LIMITATIONS

- 1.3.1. This report in no way constitutes a health and safety survey. Where concerns for tree health and safety exist the necessary and appropriate tree inspections should be carried out.
- 1.3.2. For the purposes of this report the study area is to be considered as The Site.
- 1.3.3. The following aspects of the Proposed Scheme have been identified as of arboricultural significance:
- i The removal of trees; and
 - i The potential encroachment of construction works including access / enabling works within the root protection areas of retained trees.

2 SITE DESCRIPTION

- 2.1.1. The Site is located to the west of the A1 at Lamesley, it is bordered by Smithy Lane to the south, Network Rail land to the east, an adjoining paddock / pastureland to the north and by Lamesley road to the west. The site is also bordered by a number of residential properties.
- 2.1.2. The Site is generally level with a number of depressions which at the time of survey were waterlogged and in places holding surface water.

Figure 2-1 - Aerial photograph showing extent of arboricultural study area (edged in red)



3 BASELINE ARBORICULTURAL RESOURCE

3.1 DESK STUDY

3.1.1. The desk study confirmed the absence of any Tree Preservation Orders (see glossary at Appendix 1) within the study area. However, the site does overlap the Lamesley conservation area at its south west end. It further confirmed the absence of any recorded ancient and veteran trees or ancient woodland.

3.2 SITE VISIT / SURVEY

3.2.1. A total of 11 arboricultural features were surveyed details of which are provided within the Arboricultural Survey Schedule included in Appendix D of this report. A summary of the surveyed features including their category and designation is provided in Table 3-1.

Table 3-1 - Summary of surveyed arboricultural features

BS 5837 Category	Quality	Trees	Tree Group	Hedges
B	Moderate	3	0	0
C	Low	3	1	3
U	Very Low	0	1	0
TOTAL		6	2	3

MODERATE QUALITY ARBORICULTURAL FEATURES

3.2.2. A total of three moderate quality arboricultural features were recorded: all three are specimen trees.

3.2.3. The three moderate quality trees have been recorded as T1, T2 and T4 They are located in the south west corner of the study area on third party land. The data collected for these trees is estimated only as access was not possible at the time of survey.

LOW QUALITY ARBORICULTURAL FEATURES

3.2.4. The walkover survey identified seven low quality features including three individual trees, one tree group and three hedges.

3.2.5. Low quality trees, tree groups and hedges include specimens ranging in age from young to mature, with heights of three to 16 metres, stem diameters ranging from 80 to 300 millimetres and retention spans in excess of 20 years under current site conditions. They have been variously valued based upon their arboricultural attributes and localised visual amenity.

VERY LOW QUALITY ARBORICULTURAL FEATURES

3.2.6. A single very low-quality group has been included within the survey and is referenced as G6. This group shows advanced stages of physiological decline throughout the canopies resulting significant amounts of deadwood and dead individuals. The feature may be removed without arboricultural impact and given its proximity to the rail corridor it may be advisable to do so. It should be noted

however that this group is on Network Rail land as such beyond the responsibility of Highways England and / or the existing owners of the paddock.

- 3.2.7. Although of limited arboricultural merit this group does exhibit features which may be of ecological or conservation value. On this basis it is recommended that the advice of an ecologist be sought prior to the commencement of any works which may cause damage or require removal.

4 ARBORICULTURAL IMPACT ASSESSMENT

- 4.1.1. The following Arboricultural Impact Assessment (AIA) evaluates the direct and indirect effects of the Proposed Scheme on existing trees and identifies the necessary mitigation measures where these are deemed appropriate.

ASSUMPTIONS

- 4.1.2. The site will be used for: 3.9 hectares of temporary land would be required for the extension to the existing site compound at junction 67 (Coal House). This land would be used for the temporary stockpiling of approximately 57,000 m³ of topsoil, subsoil and bulk fill material. Clause 5.1 of BS 5837 cautions against attempts to retain too many trees within a site as it can result in excessive pressure being placed upon trees during demolition or construction. This AIA has therefore been compiled on the basis of the following assumptions:
- i That preference should be given to the sustainable protection of trees around the periphery of the Site rather than the retention of trees internal to the Site and which may substantially restrict site activities; and,
 - i That a post-development scheme for the planting of trees will be developed and implemented.

4.2 ARBORICULTURAL FEATURES ASSUMED TO BE REMOVED/RETAINED

- 4.2.1. Arboricultural features assumed for removal are clearly identified on the Tree Protection Plan (TPP) included in Appendix E of this report. Details of the arboricultural features to be removed are summarised in Table 4-1.

Table 4-1 - Arboricultural features to be removed by type and quality

BS 5837 Category	Quality	Hedge
C	Low	1 (Partial)
TOTAL		1

- 4.2.2. Implementation of the Proposed Scheme will require the partial removal of one hedge (H8) only. The loss within this hedge is anticipated to be not more than a 6m gap to allow site traffic to move between two areas.

4.3 POST-SCHEME TREE PLANTING

- 4.3.1. There is opportunity to improve tree cover within group 5 which forms the embankment to Smithy Lane overbridge. However, it is assumed that this embankment is owned / managed by the local highways authority so appropriate consultation and consent should be sought prior to any planting activities.

4.4 TREE PROTECTION PLAN

- 4.4.1. A Tree Protection Plan (TPP) is included within Appendix E of this report. The purpose of the TPP is to identify trees for removal and retention and to show the location and extent of any proposed tree protection measures.

4.4.2. The TPP has been compiled in accordance with the following specification:

General

- i The TPP shows the position of each feature including its stem/extent, current crown spread and its root protection area. The features have also been coloured based upon the quality category within which they have been placed.

Location / extent of arboricultural features

- i Arboricultural features have not been located using topographical survey data, they have been plotted by eye in the field using structures as reference points where appropriate.

Root Protection Areas (RPA)

- i The root protection areas shown are indicative only at this stage. They are plotted as a circular protection area with the tree at its centre.

Tree protection measures

- i The TPP shows the location and extent of the following tree protection information:
 - Tree retention and removals;
 - Indicative construction exclusion zones for retained trees;

4.5 ARBORICULTURAL METHOD STATEMENT

4.5.1. An Arboricultural Method Statement (AMS) provided in Appendix B adopts a precautionary approach to tree protection and address those activities which have the potential to cause damage to retained trees. For the purposes of this outline design these include reference to the following matters:

- i Arboricultural monitoring;
- i Removal of arboricultural features;
- i Protective barriers;
- i New permanent hard surfacing within root protection areas

4.5.2. It is envisaged that the AMS provided within Appendix B will be further developed during detailed design. It is further envisaged that all protection measures required to ensure the sustainable retention of trees will be secured to the satisfaction of Gateshead Council via condition. These matters may include, but are not limited to, the following additional items:

- i Drainage;
- i Underground services;
- i Contractor's working area

Appendix A

GLOSSARY OF TERMS AND ACRONYMS

GLOSSARY OF TERMS

Table A-1 - Glossary of Terms

Term	Definition
Ancient Tree	A tree that has passed beyond maturity and is old, or aged, in comparison with trees of the same species. Characterised by biological, cultural or aesthetic features of interest.
Ancient Woodland	Any wooded area that has been continuously wooded since 1600 AD
Arboriculturalist	A person who has, through relevant education, training or experience, gained expertise in the field of trees in relation to construction.
Arboricultural Method Statement	A methodology for the implementation of any aspect of development which is within the root protection area, or has the capacity to adversely affect, any retained tree.
British Standard BS 5837:2012	Provides guidance and recommendations for the integration of trees and development. To be interpreted by appropriately qualified and experienced persons.
Conservation Area	An area of special architectural or historic interest identified by the Local Planning Authority.
Construction Exclusion Zone	An area within which all site clearance and construction activities, access and storage of materials are prohibited.
Crown	The upper part of a tree, measured from the lowest branch, including all branches and foliage.
Notable Tree	A tree that is very large but might not qualify as ancient or veteran.
Proposed Scheme	All works associated with the proposed development of the Site
Root Protection Area	Layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's vitality.
Tree Preservation Order	An order made by the Local Planning Authority to protect specific trees, groups of trees or woodlands in the interests of amenity.
Veteran Tree	A tree that has the biological or aesthetic characteristics of an ancient tree but is not ancient in years compared with others of the same species.

Table A-2 – List of acronyms used within this report

Acronyms	
AIA	Arboricultural Impact Assessment
AMS	Arboricultural Method Statement
BS 5837	British Standard BS 5837:2012 'Trees in relation to design, demolition and construction – Recommendations'
CEZ	Construction Exclusion Zone
RPA	Root Protection Area
TPO	Tree Preservation Order
TPP	Tree Protection Plan

Appendix B

ARBORICULTURAL METHOD STATEMENT

INTRODUCTION

This AMS describes the arboricultural protection measures identified as part of an outline design. It presents in principle the arboricultural protection measures which will be applied, and which will be expanded upon during detailed design.

This AMS must be read in conjunction with the TPP included within Appendix E of this report.

ARBORICULTURAL MONITORING

General Requirements

Effective tree protection can only be achieved by adherence to a logical sequence of works combined with effective arboricultural monitoring. The purpose of arboricultural monitoring is to ensure that all tree protection measures are fit for purpose, are implemented in accordance with any approved details and as a means of enabling any previously unforeseen arboricultural issues to be promptly identified and suitably addressed.

The Principal Contractor will be responsible for ensuring that all site personnel are made aware of the requirements of this AMS and that any future amendments are known and understood. Copies of the approved AMS will be available onsite the requirements of which will be incorporated into all relevant site management documents and site induction procedures.

Pre-Commencement

A pre-commencement meeting will be held between the Principal Contractor, local authority tree officer and the project arboriculturist. The purpose of this meeting will be to ensure that all aspects of the tree protection measures are clear and understood and that any future sequencing and supervisory arrangements are agreed. The details of this meeting will be recorded and will be circulated to all parties in writing.

The Principal Contractor shall nominate a person to be responsible for all arboricultural matters onsite. This person must:

- i Be present on site whenever work is being undertaken,
- i Be aware of their arboricultural responsibilities,
- i Have the authority to stop any work that is causing, or has the potential to cause harm to any retained tree,
- i Be responsible for ensuring that all site operatives are aware of their responsibilities toward retained trees and the consequences of any failure to observe those responsibilities,
- i Make immediate contact with the local authority and/or the project arboriculturist in the event of any tree related problems occurring, whether actual or potential.

During / Post-Construction

Once works commence the project arboriculturist will undertake a programme of monitoring. This may include phone and email contact with the site manager, regular site visits and direct monitoring of sensitive works. The frequency of any monitoring will be determined by the intensity and proximity of works to trees and will be flexible enough to accommodate changes in the scheduling of tasks as they occur on the site.

The project arboriculturist will maintain a record of all aspects of the arboricultural monitoring which has been undertaken. This will provide a record of compliance with any agreed tree protection measures and will assist in the efficient discharge of any relevant planning conditions or demonstration of compliance with any statutory requirements.

REMOVAL OF ARBORICULTURAL FEATURES

Purpose

To identify arboricultural features which are to be removed or retained and to describe any access facilitation or other pruning work that is likely to be required to implement development.

General Requirements

- i All tree work shall adhere to British Standard BS 3998:2010 *Tree work – Recommendations* paragraphs 7.2.4, 7.2.5, Table 1 and Figure 2.
- i The statutory protection afforded by the Wildlife and Countryside Act 1981 (Amended) and Countryside and Rights of Way Act 2000 (Amended) will also be adhered to. Where there is evidence that bats, nesting birds or other protected species are present then specialist advice will be obtained prior to the commencement of work.
- i All operations shall be carefully carried out to avoid damage to neighbouring trees. No trees to be retained shall be used for anchorage or winching purposes.

Specification

A schedule of currently identified tree work is provided below:

Table B-1 - Current schedule of identified tree work

TREE REFERENCE NUMBER	RECOMMENDED WORKS
H8	Fell to ground level.

Should the requirement for a tree felling or pruning arise which is additional to that identified above then the following process shall be applied:

- i Any specification shall be technically approved by an arboriculturist;
- i Written approval shall be obtained from the Local Planning Authority prior to implementation of the work.

PROTECTIVE BARRIERS

TREE PROTECTION FENCING

Purpose

To protect retained trees including their stems, crowns, rooting areas and the soil within which they grow.

General Requirements

Tree protection fencing should be specified by an arboriculturist.

Tree protection fencing will be used to prevent access to the root protection areas (RPAs) of retained trees. In all instances the following specification will be strictly adhered to:

- i The area to the rear of the tree protection fencing shall be considered to form a Construction Exclusion Zone. No construction activities, storage of materials or pedestrian or vehicular access shall take place within this area.
- i All weather notices will be attached to the tree protection fencing at suitable intervals and shall include suitably sized informative text containing the following statement:

“TREE PROTECTION FENCING

CONSTRUCTION EXCLUSION ZONE – NO ACCESS”

- i Regular daily checks will be carried out by an appointed person to ensure that all tree protection fencing is still in place and functioning; any damage will be rectified without delay.

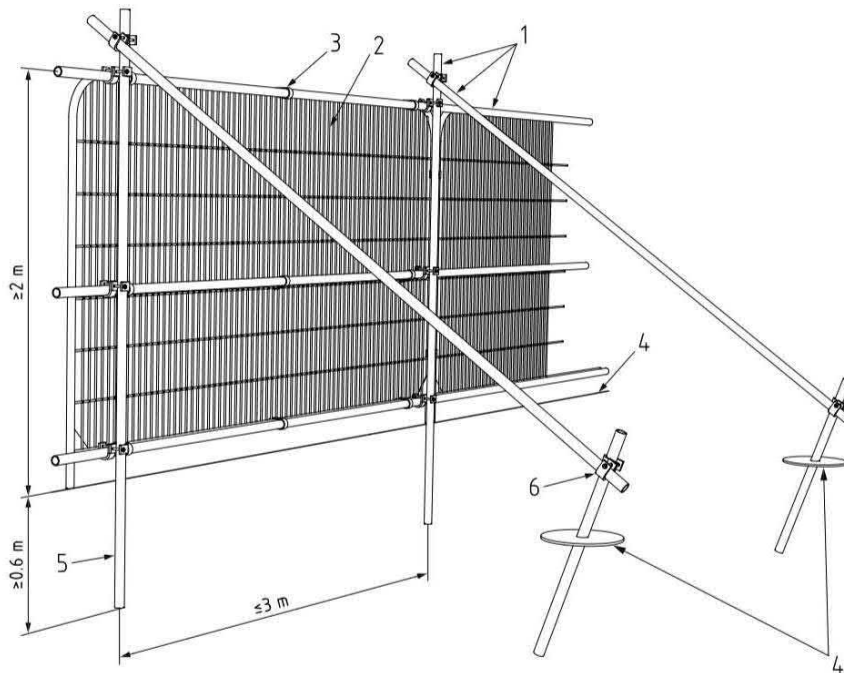
Timing

- i Tree protective fencing shall be erected prior to any works onsite including site clearance, ground work or the importation of plant and materials.
- i Once erected tree protection fencing shall remain in-situ until all construction activities are complete.

Specification for Fencing

- i Tree protection fencing shall be fit for the purpose of excluding construction activity and appropriate for the degree and proximity of work taking place. An example of the type of tree protection fencing which may be required is included in Figure B-1.

Figure B-1 - Example of appropriate tree protection fencing



Key:

1. Standard scaffold poles
2. Heavy gauge 2m tall galvanized tube and welded mesh infill panels
3. Panels secured to uprights and cross-members with wire ties
4. Ground level
5. Uprights driven into the ground until secure (minimum depth 0.6m)
6. Standard scaffold clamps

Appendix C

ARBORICULTURAL SURVEY METHODOLOGY

SURVEY METHODOLOGY

STUDY AREA

The study area has been defined as the area within which arboricultural features may be impacted by the Proposed Scheme and comprises of the Site plus a buffer of up to 15 metres¹. The purpose of the buffer is to ensure that arboricultural features which are outside the footprint of the Proposed Scheme but whose root protection areas extend into the developable area are recorded and considered.

METHOD OF BASELINE DATA COLLECTION

Baseline data collection has been undertaken with reference to BS 5837 and has been undertaken using the following data sources:

- i An arboricultural desk study, and;
- i A walkover survey of all arboricultural features within the study area.

DESK STUDY

A desk-study has been undertaken as a means of identifying any statutory and non-statutory constraints which may apply to arboricultural features within the Study Area. The desk-based review has considered the following sources:

TPOs and Conservation Areas

Gateshead Council is responsible for implementing any legal controls imposed through TPOs and conservation areas within the study area. The statutory status of arboricultural features within the study area was checked by contacting the authority directly

Notable, Ancient and Veteran Trees

The presence of locally notable, ancient and veteran trees within the study area was checked using the Woodland Trust's Ancient Tree Inventory².

Ancient Woodland

The presence of ancient woodlands within the study area was checked using Natural England's Multi Agency Geographical Information for the Countryside (MAGIC) map³.

¹ BS 5837 Clause 4.6

² Ancient Tree Inventory, 2018. *Ancient Tree Inventory* [online] Available at: < <https://ati.woodlandtrust.org.uk> > [Accessed 11 March 2020].

³ Magic (DEFRA), 2018. *Multi Agency Geographic Information for the Countryside* [online] Available at: < <https://magic.defra.gov.uk/MagicMap.aspx> > [11 March 2020].

SITE VISIT / SURVEYS

A walkover survey of all arboricultural features within the study area was undertaken on 7th February 2020. The survey was undertaken by Neil Davies (Arboricultural Consultant).

The survey was undertaken with aerial imagery forming the base mapping. The arboricultural survey was undertaken in accordance with the following criteria:

- i Arboricultural features have been recorded as tree groups or wooded areas where this has been deemed appropriate. Tree groups have been recorded on the basis that they form distinct arboricultural features either aerodynamically, visually or because they contain trees of similar cultural and biodiversity value. Wooded areas are recorded where larger expanses of trees exist and included features which may otherwise be referred to as copses, spinneys or shelterbelts.
- i Hedges have been recorded where they form substantial internal or boundary features or where they contribute meaningfully to the landscape character of the local area.
- i The trees have been inspected using the Visual Tree Assessment methodology as purported by Mattheck and Breoler⁴.
- i The tree survey was carried out from ground level only.
- i No tissue samples were taken nor was any internal investigation of the subject trees undertaken.
- i Tree heights and crown spreads have been estimated to the nearest 1m.

Stem diameters have been measured in accordance with Annex C of BS 5837. Diameters of single stem trees on level ground have been measured at 1.5m above ground level. The diameters of other commonly encountered stems have been measured where most appropriate and this is recorded within the schedule. The combined stem diameters for multi-stemmed trees have been calculated in accordance with BS 5837 paragraph 4.6.1.

By default, Root Protection Areas (RPAs) are calculated as an area equivalent to a circle with a radius 12 times the stem diameter. However, for ancient and veteran trees a root protection area with a radius of 15 times the stem diameter is used⁵

QUALITY ASSESSMENT

The quality of arboricultural features has been determined in accordance with BS 5837 Table 1 a summary of which is provided in Tables C-1, C-2, C-3 and C-4. The purpose of the quality assessment is to enable informed decisions to be made regarding the removal and retention of arboricultural features in the context of development.

The quality of each arboricultural feature is defined based on its sub-category. Sub-categories carry equal weight, do not influence retention priority and are simply included to indicate the primary value(s) associated with each surveyed item. The quality and sub-category assigned to each arboricultural feature are identified within the Arboricultural Survey Schedule included in Appendix D of this report.

⁴ Mattheck, C., Breloer, H., 2006. *The body language of trees*. Norwich: The Stationary Office

⁵ Ancient Tree Forum, 2007. *Ancient Tree Guides No.3: Trees and development* [online] Available at <http://www.ancienttreeforum.co.uk/wp-content/uploads/2015/02/ancient-tree-guide-3-development.pdf> [Accessed 25 January 2019].

Table C-1 - Sub-categories associated with high quality category A arboricultural features

Sub-category	Area of value	Estimated remaining life expectancy (years)	Description
1	Arboricultural	>40	Trees that are of particularly good examples of their species (e.g. notable specimens), especially if rare or unusual; or those that are essential components of groups, or of formal or semi-formal arboricultural features (e.g. the dominant and/or principle trees within an avenue).
2	Landscape	>40	Trees, groups, or woodlands of particular visual importance as arboricultural and/or landscape features.
3	Cultural	>40	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. ancient trees, veteran trees and ancient woodland).

Table C-2 - Sub-categories associated with moderate quality category B arboricultural features

Sub-category	Area of value	Estimated remaining life expectancy (years)	Description
1	Arboricultural	>20	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. the presence of significant though remediable defects including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention beyond 40 years; or trees lacking the special quality necessary to merit category A designation.
2	Landscape	>20	Trees present in numbers, usually as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality.
3	Cultural	>20	Trees with material conservation or other cultural value.

Table C-3 - Sub-categories associated with low quality C category arboricultural features

Sub-category	Area of value	Estimated remaining life expectancy (years)	Description
1	Arboricultural	>10	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories.
2	Landscape	>10	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits.
3	Cultural	>10	Trees with no material conservation or other cultural value.

Table C-4 - Very-Low Quality U Category Arboricultural Features

Sub-category	Estimated remaining life expectancy (years)	Description ⁶
None	<10	Trees that have serious irremediable structural defects; Trees that are dead or are showing signs of immediate and irreversible physiological decline, and; Trees infected with significant pathogens or very-low quality trees suppressing specimens of better quality.

NOTES AND LIMITATIONS

Arboricultural survey data is of a preliminary nature and has been collected based on a walkover survey. Only defects visible from the ground have been noted and each individual feature may not have been inspected closely due to access difficulties, the presence of dense ivy or vegetation or safety constraints. Safety related features have recorded on the basis that the arboricultural features will be subject to a normal programme of tree hazard assessment and only those features which materially affect the quality of the feature or pose a real and immediate safety concern have been recorded.

Arboricultural survey data is typically valid for a period of two years unless otherwise stated. Significant environmental events (such as extreme weather conditions) or changes to the Site may render it invalid within a shorter timescale.

Records held on the Ancient Tree Inventory⁷ are collected on a voluntary basis, therefore the absence of records does not demonstrate the absence of ancient, veteran or notable trees but may simply indicate a gap in recording coverage.

⁶ These features do not apply in the instance that a tree is defined as ancient or veteran

⁷ Ancient Tree Inventory, 2018. *Ancient Tree Inventory* [online] Available at: < <https://ati.woodlandtrust.org.uk> >

Whilst arboricultural surveys are not seasonally limited it is the case that certain pests and diseases may be more or less evident at different times of the year. This is especially true of certain wood decaying fungi such as the Giant Polypore (*Meripilus giganteus*) where fruiting bodies are short-lived and the early stages of root decay may not result in other identifiable symptoms. Walkover survey data is therefore based upon observations made at the time of the site visit and may be subject to change should further or more detailed inspections be undertaken.

The survey has only been undertaken from land within the client's ownership, from public land or from areas where formal access has been arranged.

The position of arboricultural features not recorded on a topographical survey has been estimated using aerial photography. The position and extent of these features should be regarded as approximate only.

Appendix D

ARBORICULTURAL SURVEY SCHEDULE

Key:	Description			
REFERENCE NUMBER:	Individual reference number			
TYPE:	T - Tree	G – Tree Group	W – Wooded Area	H - Hedge
SPECIES:	Species listed by common name			
HEIGHT:	Overall height (m) – maximum and minimum heights may be recorded for tree groups, wooded areas and hedges where these vary considerably or are deemed to be noteworthy			
DIAMETER:	Stem diameter (mm) calculated in accordance with BS 5837 paragraph 4.6.1. An average stem diameter is provided for tree groups, wooded areas and hedges			
CROWN SPREAD	Spread of crown based upon the maximum lateral dimension (m)			
LCH:	Lowest crown height (m)		* Where an arboricultural feature abuts the edge of the study area then only the portion of the crown within/overhanging the study area will be surveyed and recorded	
LBH:	Height of lowest significant branch (m)			
AGE CLASS:	Young - < 1/3rd estimated life expectancy	Semi-mature – 1/3rd to 2/3rd estimated life expectancy	Mature - > 2/3rd estimated life expectancy	Veteran – a tree which exists significantly beyond its normal life expectancy
PHYSIOLOGICAL CONDITION:	Good	Fair	Poor	Dead
STRUCTURAL CONDITION:	Good	Fair	Poor	
ESTIMATED REMAINING CONTRIBUTION:	>10 years	10+ years	20+ years	40+ years
CATEGORY:	BS 5837 Category - A, B, C, U		BS 5837 Sub-category - 1, 2, 3	
RPA RADIUS	The radius of the circular Root Protection Area associated with the tree as measured from the centre of the stem (m). For arboricultural features where more than one stem diameter is recorded the RPA radius is calculated using the largest dimension.			

TREE NO	TYPE	SPECIES	HEIGHT (m)	MINIMUM HEIGHT (m)	MAXIMUM HEIGHT (m)	STEM DIAMETER (mm)	MINIMUM DIAMETER (mm)	MAXIMUM DIAMETER (mm)	MAXIMUM CROWN SPREAD (m)	LCH	LBH	AGE CLASS	PHYSIOLOGICAL CONDITION	STRUCTURAL CONDITION	ESTIMATED REMAINING CONTRIBUTION	CATEGORY	SUB-CATEGORY	NOTES
1	T	Poplar	20	–	–	550	–	–	6	2	2	Mature	Good	Good	40+	B	2	No obvious sign of significant defect, viewed from adjacent land only
2	T	Poplar	20	–	–	375	–	–	6	2	2	Mature	Good	Good	40+	B	2	No obvious sign of significant defect, viewed from adjacent land only
3	T	Sycamore	10	–	–	300	–	–	4	2	2	Semi Mature	Good	Good	20+	C	2	No obvious sign of significant defect, viewed from adjacent land only
4	T	Poplar	20	–	–	350	–	–	6	2	2	Mature	Good	Good	40+	B	2	No obvious sign of significant defect, viewed from adjacent land only

TREE NO	TYPE	SPECIES	HEIGHT (m)	MINIMUM HEIGHT (m)	MAXIMUM HEIGHT (m)	STEM DIAMETER (mm)	MINIMUM DIAMETER (mm)	MAXIMUM DIAMETER (mm)	MAXIMUM CROWN SPREAD (m)	LCH	LBH	AGE CLASS	PHYSIOLOGICAL CONDITION	STRUCTURAL CONDITION	ESTIMATED REMAINING CONTRIBUTION	CATEGORY	SUB-CATEGORY	NOTES
5	G	Sycamore, Thorn, Ash, Gorse, Birch,	–	2	10	200	75	300	6	0	0	Semi Mature	Good	Good	20+	C	2	scrubby group with occasional larger tree
6	G	Poplar / Willow	20	2	20	550	75	650	6	0	0	Mature	Poor	Poor	<10	U	1	Very poor condition. In advanced state of decline, recommend felling to ground level
7	H	Thorn	8	8	8	175	175	175	3	0	0	Mature	Good	Good	20+	C	2	3 trees. Remnants from past hedge, low arb quality
8	H	Thorn	6	6	6	125	125	125	4	0	0	Mature	Good	Good	20+	C	2	Hedge
9	T	Poplar	10	–	–	100	–	–	2	0	0	Young	Good	Good	10+	C	2	Young tree within hedge
10	T	Poplar	16	–	–	200	–	–	2	0	0	Semi Mature	Good	Good	10+	C	2	Young tree within hedge

TREE NO	TYPE	SPECIES	HEIGHT (m)	MINIMUM HEIGHT (m)	MAXIMUM HEIGHT (m)	STEM DIAMETER (mm)	MINIMUM DIAMETER (mm)	MAXIMUM DIAMETER (mm)	MAXIMUM CROWN SPREAD (m)	LCH	LBH	AGE CLASS	PHYSIOLOGICAL CONDITION	STRUCTURAL CONDITION	ESTIMATED REMAINING CONTRIBUTION	CATEGORY	SUB-CATEGORY	NOTES
11	H	Thorn	3	3	3	80	80	80	2	0	0	Semi Mature	Good	Good	20+	C	2	Hedge

Appendix E

TREE PROTECTION PLAN

THIS DRAWING MAY BE USED ONLY FOR THE PURPOSE INTENDED AND ONLY WRITTEN DIMENSIONS SHALL BE USED



- Key
- Arboricultural Survey Boundary
 - Tree Protection Fencing
 - ROOT PROTECTION AREA

BS 5837 CATEGORY GRADING / QUALITY

Category

- B / MODERATE
- C / LOW
- U / VERY LOW

Notes

- T TREE
- G TREE GROUP
- H HEDGE

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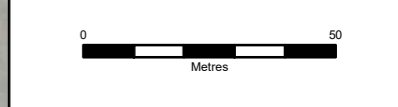
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Job Title	A1B2CH
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Drawing Title	Tree Protection Plan
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Stage 1 check	Stage 2 check	Originated	Date
JT	ND	ND	01/04/2020



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