A1 Birtley to Coal House

Scheme Number: TR010031

ES Addendum: Allerdene Three Span Viaduct Option

APFP Regulation 5(2)(a)

Planning Act 2008

The Infrastructure Planning (Examination Procedure Rules) 2010

April 2020

Infrastructure Planning

Planning Act 2008

The Infrastructure Planning (Examination Procedure Rules) 2010

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

ES Addendum: Allerdene Three Span Viaduct Option

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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 (the "Scheme"). A full description of the Scheme can be found at **Chapter 2: The Scheme** of the ES **[APP-023]**. The ES set 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 as well as reducing duration of traffic delays to road users due to the shorter construction period, with associated savings in carbon and other emissions. Similarly, the capacity and safety benefits associated with the Scheme would be delivered sooner by an equivalent amount. 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 ES Addendum relates to is as follows:

a. The inclusion of further design flexibility in relation to the proposed replacement Allerdene Railway Bridge. The draft DCO **[APP-013]** currently allows for the replacement of Allerdene Railway Bridge by a single span integral bridge (Allerdene embankment option) or a 6/7-span viaduct (Allerdene viaduct option). It is further proposed to enable the inclusion of a design for a three span viaduct (Allerdene three span viaduct option) within the DCO application.

1.1.6. The details for Allerdene three span viaduct option are described in **Section 2: The Scheme** of this ES Addendum and the Scheme drawings are presented in the updated General Arrangement Plans **[APP-010]** submitted at Deadline 4 of the examination.

1.1.7. The purpose of this ES Addendum is to ensure that the environmental impacts of those proposed amendments 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) (as amended) (**Ref. 1.1**).

1.1.8. This ES Addendum presents an assessment of the likely significant effects as a result of Allerdene three span viaduct option. It is not a duplication of the ES and should be read in conjunction with the ES.

1.2 SCOPE OF THE ASSESSMENT

1.2.1. In order to understand if there would be significant environmental effects as a result of Allerdene three span viaduct option when compared against the two options assessed in the ES, a sensitivity appraisal has been carried out. The purpose of the appraisal has been to consider whether the three span viaduct option would alter the conclusion of the EIA already undertaken. The outcome of the sensitivity appraisal has then informed a scoping exercise to identify if further EIA would be required, in accordance with the EIA Regulations 2017 (**Ref. 1.1**), would be required. The findings of the scoping exercise are presented in **Appendix A: Allerdene Three Span Viaduct Option: Sensitivity Appraisal and Scoping Report**.

1.2.2. **Appendix A: Allerdene Three Span Viaduct Option: Sensitivity Appraisal and Scoping Report** indicates that Allerdene three span viaduct option has the potential to change the conclusions of **Chapter 7: Landscape and Visual** of the ES **[APP-028]** and **Chapter 8: Biodiversity** of the ES **[APP-029]**. This ES Addendum therefore presents an assessment of the likely significant effects as a result of Allerdene three span viaduct option 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: Allerdene Three Span Viaduct Option: Sensitivity Appraisal and Scoping Report**. Where the impacts and residual significant effects were considered to be comparable to those already assessed in the ES, no consultation was undertaken.

1.3.2. 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 (**Ref. 1.2**) and recommended by the Examining Authority (ExA) in its Rule 8 letter dated 28 January 2020.

1.3.3. A summary of consultation undertaken is presented in **Table 1-1** below, and the full consultation records presented in **Appendix B: Environmental Consultation Records.** In addition, comments on the Scheme have been addressed within the Consultation Statement **[EXA/D4/004]**.

Table 1-1 - Summary of Consultation by Topic

Topic	Date / Method of Contact	Consultee / Name of Consultee	Overview of Consultation
Gateshead Council			
Landscape and Visual	27/01/2020 – Telephone	Janet Charlton-Gateshead Council	Gateshead Council stated that they would like additional information on Allerdene three span viaduct option to inform further discussion.
Landscape and Visual	18/02/2020 (Email)	Janet Charlton-Gateshead Council	Gateshead Council agreed the proposed scope for the additional landscape and visual assessment of Allerdene three span viaduct option. The landscape and visual aspects scoped in are: Landscape character - construction (daytime and night time); Landscape character - operation; Visual Amenity construction (daytime and night time) and Visual Amenity operation.
Natural England			
Biodiversity	06/04/2020 (Email)	Andrew Whitehead	Having considered the detail in the ES Addendum Natural England does not consider the changes to warrant an alteration to the position we have previously detailed to the Planning Inspectorate in Relevant and Written Representations for this scheme, and have no comments to make.

1.4 STRUCTURE OF THE ES ADDENDUM

1.4.1. This ES Addendum is structured as follows:

a. ES Addendum Main Text, setting out the environmental assessment
b. ES Addendum Figures, including drawings, photos and other illustrative material
c. ES Addendum technical Appendices

i. **Appendix A:** Allerdene Three Span Viaduct Option: Sensitivity Appraisal and Scoping Report

ii. **Appendix B:** Environmental Consultation Records

iii. **Appendix C:** Visual Effects Schedule – Addendum Three Span Viaduct Option

iv. **Appendix D:** Figures

v. **Appendix E:** Register of Environmental Actions and Commitments (REAC)

d. Non-Technical Summary (NTS)

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

a. Chapter 1 – Introduction to the 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 – 4 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** - Landscape and Visual

ii. **Chapter 4** - Biodiversity

d. Chapter 5 – Summary provides a summary of the likely significant effects reported in this ES Addendum

e. Chapter 6 – Abbreviations

f. Chapter 7 – 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

BENEFITS OF THE THREE SPAN VIADUCT OPTION

2.2.1. The benefits for this proposed change would be to:

a. Allerdene three span option would provide a more efficient option in terms of construction activities and duration, particularly when compared to Allerdene embankment option, which, in turn, provides environmental benefits.

b. It would reduce the amount of material required to construct the approach embankments by approximately 60,000m^3 when compared to Allerdene embankment option. This would reduce the construction programme by an estimated 6 months period (from 36 months for Allerdene embankment option within the Application to 30 months for Allerdene three span option). This would result in fewer associated construction vehicle movements which equates to a reduction of an estimated 6,900 deliveries of fill material in 8-wheeled tipper wagons based on an approximate overall import delivery rate of 500m^3 per day.

c. Reduced duration of traffic delays to road users due to the shorter construction period, with associated savings in carbon and other emissions. Similarly, the capacity and safety benefits associated with the Scheme would be delivered sooner by an equivalent amount.

d. Allerdene three span option would provide an efficient superstructure design, reducing the steelwork tonnage required to support the bridge deck. This also simplifies deliveries to site and reduces the construction risk and complexity of lifting beams into place above the railway.

e. As the footprint of the embankments would reduce, when compared to Allerdene embankment option, due the steepened earth slopes, fewer rigid inclusions would be required to stabilise the ground. This would reduce construction noise and the volume of concrete required.

f. The use of a 3-span structure alternative would combine benefits associated with both Allerdene embankment option and Allerdene viaduct option as included in the Application such as:

i. Eliminating risk associated with potential settlement or heave on the railway caused by new loads from the approach embankments that would be in close proximity in the case of Allerdene embankment option.

ii. Removal of complex temporary works to construct the western abutment in close proximity to the A1 that would be required for Allerdene viaduct option to keep the A1 operating during the works.

2.3 SCHEME DESCRIPTION

OVERVIEW

2.3.1. The content of **Chapter 2: The Scheme, Sections 2.5-6** of the ES **[APP-023]** remains unchanged and valid, with the exceptions of the additions and changes outlined below.

2.3.2. The General Arrangement Plans **[APP-010]** illustrate the main components of the Scheme and an updated drawing including Allerdene three span viaduct option has been submitted at Deadline 4.

2.3.3. **Paragraph 2.5.6** of **Chapter 2: The Scheme** of the ES **[APP-023]** is amended to refer to three design solutions for the replacement of the Allerdene Bridge.

2.4 DESIGN

2.4.1. The content of **Chapter 2: The Scheme, Section 2.7** of the ES **[APP-023]** remains unchanged and valid, with the exception of the additions and changes outlined below.

STRUCTURES

Allerdene Bridge

2.4.2. Allerdene three span viaduct option has been added to the Scheme design as described below. Previous text this relates to is contained within **paragraphs 2.7.7** to **2.7.10** of **Chapter 2: The Scheme** of the ES **[APP-023]**. The text is unchanged as reported in **paragraph 2.7.5** of **Chapter 2: The Scheme** of the ES.

2.4.3. To retain flexibility for the detailed design stage three design solutions are now proposed for this part of the Scheme as part of the DCO, all of which include ground improvement to mitigate settlement:

a. Allerdene three span viaduct option would be a multi span viaduct structure supported on piled foundations 40m deep which ties into embankment structures at either end.

b. Allerdene three span viaduct option would be the same height and would be on the same alignment as Allerdene embankment option and Allerdene viaduct option.

2.4.4. The three design options are included within the DCO application to provide flexibility to allow further analysis to be conducted when detailed design is carried out. At the detailed design stage, the preferred option would be identified and taken forward into construction.

2.4.5. For Allerdene three span viaduct option, Allerdene Bridge would be replaced with a three-span structure, with a maximum length of 154m (refer to General Arrangement Plans **[APP-010]** submitted at Deadline 4).

Figure 2-1 - Allerdene Three Span Viaduct Option - Illustration

2.4.6. The structural form and foundations would be similar to the viaduct option but with a reduced number of spans. The structure would have three components as follows:

a. Superstructure - The north and south bound A1 carriageway would be two structurally independent decks. The main girders would comprise fabricated weathering steel plate sections (not standard beams) that are connected to form the webs/flanges to the main longitudinal girders. The girders would support a reinforced concrete deck.

b. Substructure - The intermediate piers would comprise reinforced concrete piers or alternatively a series of columns interconnected via a reinforced concrete cross head beam at the top and a pile cap at the base. The end supports (abutments) would comprise reinforced vertical concrete cantilever construction.

c. Foundations - The foundation to the intermediate piers/abutments would comprise reinforced concrete bored pile foundations with a minimum diameter of 900mm and an embedment depth of 40m.

2.4.7. Similar to Allerdene Embankment option, an embankment would be constructed either side of the viaduct and would extend between the eastern extent of Kingsway Viaduct and the tie-in to the existing alignment to the north of Smithy Lane Overbridge. It is also proposed that reinforced earth is used to form the approach embankments to the east and west of the East Coast Main Line (ECML). This would result in slopes being steepened from those proposed for Allerdene embankment option (1:3 slope), to a suggested maximum horizontal angle of 60 degrees. This and the reduction in embankment length of 90m compared with Allerdene embankment option would reduce the overall footprint of the embankments and would reduce the amount of imported fill required.

2.4.8. The reinforced earth slopes would be seeded with a grass mix appropriate to the location. The seed specification and final seed mix would include a nursery crop for quick establishment as well as slower growing species and this would be determined at detailed design. The design of the grass mix would contribute to a minimal / low frequency maintenance regime to encourage biodiversity interest over time. An example of what this may look like is shown in **Figure 2-2** below.

Figure 2-2 - Seeded Reinforced Earth Embankment

2.4.9. To mitigate any settlement risks, ground improvement would be provided in the form of rigid inclusions in the proposed embankments, as for Allerdene embankment option.

2.4.10. Similar to Allerdene embankment option, Allerdene Culvert would be completely removed and replaced with a new culvert structure measuring 116.5m in length. The proposed culvert would comprise a steel multi-plate pipe arch with concrete headwalls, wingwalls and apron to both the upstream and downstream ends of the structure. The cross section of the new culvert would exceed that of the existing culvert to allow for future increases in hydraulic capacity.

2.5 CONSTRUCTION, OPERATION AND LONG TERM MANAGEMENT

CONSTRUCTION

Phasing

To and through the approach at Junction 67 (Coal House)

2.5.1. This covers junction 67 (Coal House) including Kingsway Viaduct and the new retaining walls associated with the junction 67 (Coal House) on and off slip roads up to chainage 11200.

2.5.2. Works are divided into five phases which are described below:

Phase 1

2.5.3. The following text is additional to the information provided in the ES.

Allerdene Three Span Viaduct Option

2.5.4. Allerdene Culvert would be realigned. The construction of the Allerdene three span viaduct option would be undertaken in 5 stages:

2.5.5. Preliminary Works: Site clearance over the footprint of the works would be carried out followed by the establishment of haul roads and laydown areas for the works. Grouting works to the underlying coal measures would then be undertaken beneath the proposed piers and abutment locations. Temporary driven sheet piling would be required to retain the existing carriageway at the Southern and Northern extents of the Viaduct, followed by excavation in front of these piles. Piling platforms (500mm deep) would be installed, allowing access for bored piling rigs for the installation of 900mm diameter piles at the piers and abutments.

2.5.6. Abutment Works: Following installation of piling, abutment construction would proceed with the construction of reinforced concrete pile caps. Abutment wall construction would follow with the erection of temporary access scaffolding. Concreting of the abutment would be undertaken using a 32m concrete pump and, following curing, the formwork would be removed by mobile crane.

2.5.7. Viaduct Pier works: Access scaffolding would be erected allowing installation of a reinforcement cage then erection of a proprietary formwork system by 80t mobile crane. Concreting of the piers would be undertaken with a 32m concrete pump and following curing, formwork would be stripped with the 80t crane.

2.5.8. Viaduct Deck Works: The form of the deck comprises steel beams with an in situ concrete deck. The steel beams would be factory fabricated and brought to site where a crane (up to 1,000t) would offload the individual beams where they would be paired together then lifted into position as braced pairs. On completion of the bridge beam installation, Permanent Formwork System' deck panels and cantilever formwork would be erected using a 100t crane. Following this operation, deck reinforcement and formwork would be placed, with the assistance of a 100t service crane. Deck concreting may then proceed using a 32m concrete pump, with concreting being undertaken in the sequence prescribed. On curing, finishing works may then be undertaken to include waterproofing, kerbing, parapets and surfacing. The cantilever formwork components would then be removed by crane.

2.5.9. Tie In Works: Final tie in works between the existing embankment and the new abutment walls would be completed. These works would include the installation of rigid inclusions and the earthworks tie in installed in compacted layers with a dozer and pneumatic compaction roller. Imported 6N granular material would be placed immediately behind the abutment. On completion of the earthworks, drainage, roadworks and finishes may be completed.

Phases 3, 4 and 5

2.5.10. Phases 3, 4 and 5 would be the same as that detailed in paragraphs 2.9.31 to 2.9.35 of **Chapter 2: The Scheme** of the ES **[APP-023]**.

Allerdene Bridge

2.5.11. Paragraphs 2.9.37 to 2.9.40 of **Chapter 2: The Scheme** of the ES **[APP-023]** equally apply to the Allerdene three span viaduct option.

2.5.12. The following text is additional to the information provided in the ES.

Three Span Viaduct Option

2.5.13. Temporary works (embedded sheet pile retaining wall) would be installed at the interface/tie-in between the existing and proposed new offline embankment.

2.5.14. Ground improvements (rigid inclusions) would be installed to the approach embankments.

2.5.15. Piled foundations would be constructed at the abutment and intermediate bridge pier location. The embedment depth of piles for this option would be 40m.

2.5.16. Reinforced concrete intermediate piers/abutments would be constructed including backfilling to abutments and installation of bearings upon which new bridge girders would be seated.

2.5.17. The approach embankments would then be built up/constructed.

2.5.18. The girders for the new viaduct would be constructed off-site and fabricated to lengths that would be readily transported to site. Once on site the girders would be spliced together and lifted into position as required. Girders would be lifted in pairs for stability. Lifting of the new bridge girders for the rail bridge span over the ECML would be undertaken during a series of weekend possessions. Depending on the crane position it is anticipated the girders to the other bridge spans could potentially be installed during normal working hours.

2.5.19. The reinforced concrete deck including concreting, parapets, waterproofing, surfacing and joints would be constructed.

2.5.20. Once complete, traffic would be diverted onto the new A1 alignment to allow the existing Allerdene Bridge to be demolished.

3 LANDSCAPE AND VISUAL

3.1 INTRODUCTION

3.1.1. **Chapter 7: Landscape and Visual** of the ES **[APP-028]** considers the likely significant effects of the Scheme on Landscape and Visual. This ES Addendum chapter considers only the likely significant effects of the proposed amendments to Allerdene three span viaduct option on Landscape and Visual.

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 details of expertise where this is different to those presented in the ES.

Table 3-1 – 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 and Visual Impact Assessment (LVIA) and design inputs for a diverse range of schemes including: - A1 Alnwick to Ellingham. - Spalding Western Relief Road, Sections 1 and 5. - M1 Junction 19 Improvement scheme; - Botany Bay, Mixed Use Developments, Chorley.

3.3 LEGISLATIVE AND POLICY FRAMEWORK

3.3.1. The legislative and policy framework for landscape and visual effects has not changed in relation to Allerdene three span viaduct option. Therefore, the text within **Section 7.3** of **Chapter 7: Landscape and Visual** of the ES **[APP-028]** remains unchanged and valid.

3.4 ASSESSMENT METHODOLOGY

3.4.1. Since the publication of the ES the Design Manual for Road and Bridges (DMRB) guidance for landscape was updated from Interim Advice Note 135/10 to LA 107 (**Ref. 3.1**). During the examination of the Scheme a sensitivity test was undertaken (**appendix 1.0H**: DMRB Review Option **[REP2-008])** to ascertain whether the updated guidance would result in significant effects compared to the previous guidance. The sensitivity test for landscape

concluded that the findings of the assessment would not be materially changed as a result of the adoption of the new guidance. In order to ensure that a comparable assessment was carried out the assessment methodology for the Landscape and Visual assessment has not been changed for Allerdene three span viaduct option. Therefore, the text within **Section 7.4** of **Chapter 7: Landscape and Visual** of the ES **[APP-028]** remains unchanged and valid.

3.5 ASSESSMENT ASSUMPTIONS AND LIMITATIONS

3.5.1. The assessment assumptions and limitations for Landscape and Visual have not changed for Allerdene three span viaduct option, with the exception of the following:

a. The assessment assumes that the overall bridge height would be the same as Allerdene embankment option and Allerdene viaduct option.
b. The assessment assumes that the engineered soil slope could be seeded with a grass seed mix effectively to provide a green appearance.
c. The assessment assumes that the engineered soil slope would be maintained clear of woody vegetation.
d. The assessment assumes that maintenance operations, specific to this option and potentially requiring operations working at height to maintain grass and remove woody planting growth, could be carried out by the main contractor.

3.5.2. Therefore, the remaining text within **Section 7.4** of **Chapter 7: Landscape and Visual** of the ES **[APP-028]** remains unchanged and valid.

3.6 STUDY AREA

3.6.1. The study area for the Landscape and Visual assessment has not changed for Allerdene three span viaduct option. Therefore, the text within **Section 7.6** of **Chapter 7: Landscape and Visual** of the ES **[APP-028]** remains unchanged and valid.

3.7 BASELINE

3.7.1. The baseline for the Landscape and Visual assessment has not changed for Allerdene three span viaduct option. Therefore, the text within **Section 7.7** of **Chapter 7: Landscape and Visual** of the ES **[APP-028]** remains unchanged and valid.

3.8 POTENTIAL IMPACTS

LANDSCAPE

Construction

3.8.1. The potential impacts to landscape character, and specifically Local Landscape Character Area (LLCA) 1 – Team Valley remain unchanged for Allerdene three span viaduct, when compared with the Allerdene embankment option. Therefore, the text relevant to construction described within **Section 7.8** of **Chapter 7: Landscape and Visual** of the ES **[APP-028]** remains unchanged and valid aside from **paragraph 7.8.3e**. Instead the

anticipated impacts, which would be the same as those for Allerdene embankment option, as follows:

a. Construction of Allerdene three span viaduct option, to facilitate the crossing of the ECML would occur adjacent to the existing bridge temporarily using large plant including cranes, increasing the awareness and urbanising influence on local character.

Operation

3.8.2. The impacts to landscape character are not anticipated to change from that assessed in the ES, if the Allerdene three span viaduct option was constructed. Therefore, the text relevant to the operation of Allerdene embankment option in winter Year 1, described within **Section 7.8** of **Chapter 7: Landscape and Visual** of the ES **[APP-028]** remains unchanged and valid.

3.8.3. Impacts in the summer of Year 15 would remain comparable to those identified as arising in the winter of Year 1 for Allerdene embankment option, this would occur due to the absence of trees and shrubs on the engineered soil slopes, resulting in the embankment slope remaining noticeable within the character area.

VISUAL

Construction

3.8.4. The impacts to visual amenity are not anticipated to change from that assessed in the ES, if the Allerdene three span viaduct option was constructed, when compared with the Allerdene embankment option. Therefore, the text within **Section 7.8.** of **Chapter 7: Landscape and Visual** of the ES **[APP-028]** remains unchanged and valid.

Operation

3.8.5. Upon completion of the Scheme, the impacts of Allerdene three span viaduct option would be comparable to those described for Allerdene embankment option in winter Year 1. The extent to which the road, moving traffic and infrastructure would be visible would be comparable to Allerdene embankment option. The inclusion of the engineered soil embankment slope for Allerdene three span viaduct option would prevent the establishment of trees and shrubs on the slope, the embankment comprising grassland. In the absence of trees and shrubs as part of the landscape mitigation design, potential visual impacts would arise as a result of:

a. Newly formed embankments, including those associated with Allerdene three span viaduct option that would raise the vertical elevation of the highway, resulting in it being more prominent within associated views.
b. Increased awareness of traffic moving through the corridor as a result of vegetation removal.
c. Greater awareness of new structures including Allerdene three span viaduct option.

3.8.6. Impacts that would arise for Allerdene three span viaduct option in the summer of Year 15 would be comparable to those experienced in the winter of Year 1, when compared with the

Allerdene embankment option, although summer foliage would soften broader views of the corridor. The absence of trees and shrubs from the engineered soil embankment would leave this section of the A1 and Allerdene three span viaduct highly visible, particularly from views to the south and south west. Impacts would be similar to those identified as arising in winter Year 1, when compared with the Allerdene embankment option; the impact of the engineered slope remaining in the absence of the ability to mitigate through planting trees and shrubs.

3.9 DESIGN, MITIGATION AND ENHANCEMENT MEASURES

3.9.1. The mitigation design would be broadly comparable with the proposed mitigation strategy for the Allerdene viaduct option. A modification to this would be the incorporation of an engineered soil embankment to replace retaining walls on the western approach to the viaduct structure. The slope would be seeded with a grassland mix specified so as to reduce the ongoing maintenance burden.

3.9.2. The remaining design, mitigation and enhancement measures for landscape and visual effects have not changed due to the introduction of the Allerdene three span viaduct option. Therefore, the remaining text within **Section 7.9** of **Chapter 7: Landscape and Visual** of the ES **[APP-028]** remains unchanged and valid.

3.10 ASSESSMENT OF LIKELY SIGNIFICANT EFFECTS

LANDSCAPE CHARACTER

Construction

3.10.1. Allerdene three span viaduct option would result in comparable effects to Allerdene embankment option, with the formation of the permanent embankment slopes being of a similar scale and nature. The construction of Allerdene three span viaduct option would similarly represent a conspicuous new feature within the landscape when compared with Allerdene embankment option. As a result, the text at **paragraphs 7.10.2 to 7.10.4** of **Chapter 7: Landscape and Visual** of the ES **[APP-028]** remains unchanged and valid.

Operation

3.10.2. Allerdene three span viaduct option would result in comparable effects to Allerdene embankment option. However, in the absence of shrubs and trees on the embankment slope a wider appreciation of traffic passing across the structure would remain, comparable to Allerdene viaduct option in extent. The effects identified in the winter year 1 for Allerdene embankment option would remain and be a permanent feature of the landscape. The findings of the assessment are that the text at **paragraphs 7.10.19** to **7.10.20** and **7.10.26** to **7.10.28** of **Chapter 7: Landscape and Visual** of the ES **[APP-028]** remains unchanged and valid. However, Allerdene three span viaduct option would result in a **minor adverse** magnitude of impact in the winter of the opening year and would result in a **slight adverse** (not significant) significance of effect, and this significance of effect would remain in the summer of the design year.

VISUAL

Construction

3.10.3. Allerdene three span viaduct option would result in similar effects to those receptors with a view of Allerdene embankment option. As a result, the text at **paragraphs 7.10.64** to **7.10.76** of **Chapter 7: Landscape and Visual** of the ES **[APP-028]** remains unchanged and valid.

Operation

3.10.4. Those receptors with a view of Allerdene three span viaduct option in winter Year 1 would experience comparable effects to Allerdene embankment option in winter Year 1. This is due to the impact of the traffic and associated structures being perceptible over a comparable distance, the embankment slopes and structure crossing the ECML, albeit longer in length (62m for the Allerdene embankment option compared to 154m for Allerdene three span viaduct option). The embankment slope for Allerdene three span viaduct option would be a perceptible feature in views, particularly from visual receptors R7, R8, R17 and P3 (refer to **Figure 7.4: Visual Effects** Drawing of the ES **[APP-057]**) to the south and south west (refer to **Appendix C: Visual Effects Schedule – Addendum Three Span Viaduct Option**). These visual receptors are illustrated in **Appendix D: Figures**, **Figure 7.7: Viewpoint Photomontages, Viewpoints 5, 6 and 28**. Compared with Allerdene embankment option the impacts would not be substantially different to the components of the views, with the engineered soil embankment making up the remaining component of the view. The degree to which traffic would remain visible being comparable with Allerdene embankment option. As a result, the text at **paragraphs 7.10.77** to **7.10.83** of **Chapter 7: Landscape and Visual** of the ES **[APP-028]** remains unchanged and valid, the Allerdene three span viaduct option giving rise to a magnitude of impact and significance of effect comparable to the Allerdene embankment option which is considered not significant.

3.10.5. In the summer of Year 15, the effects arising from Allerdene three span viaduct option are not anticipated to have substantially changed from those experienced in the winter of Year 1. This is due to the absence of tree and shrub planting on the engineered soil embankment slope, with some trees and hedgerows maturing to the south of Allerdene three span viaduct, as part of the landscape strategy outlined in **Appendix D: Figures, Figure 7.6 – Landscape Mitigation Design**. As a result, the magnitude of impact and resulting effect arising due to Allerdene three span viaduct option would not be substantially different to those described for Allerdene embankment option in the winter of Year 1. The extent to which traffic movements would be visible would be noticeably different for Allerdene three span viaduct option and Allerdene embankment option, the grassed embankment slope would remain unvegetated for Allerdene three span viaduct option, and the bridge deck would be perceptibly longer (154m for Allerdene three span viaduct option compared to the 62m for Allerdene embankment option). Therefore, the magnitude of impact and significance of effects ratings would be similar to those described for Allerdene embankment option and significant effects (**moderate adverse**) would remain for receptors R7, R8, R17

and P3 (refer to **Figure 7.4: Visual Effects Drawing** of the ES **[APP-057]**). The findings of the assessment at **paragraphs 7.10.77** to **7.10.83** of **Chapter 7: Landscape and Visual** of the ES **[APP-028]** remains unchanged from that described in the winter of Year 1 and valid.

3.11 MONITORING

3.11.1. The monitoring requirements for landscape and visual effects have not changed should the Allerdene three span viaduct option be constructed. Therefore, the text within **Section 7.11** of **Chapter 7: Landscape and Visual** of the ES **[APP-028]** remains unchanged and valid.

4 BIODIVERSITY

4.1 INTRODUCTION

4.1.1. **Chapter 8: Biodiversity** of the ES **[APP-029]** considers the likely significant effects of the Scheme on Biodiversity. This ES Addendum chapter considers only the likely significant effects on Biodiversity as a result of Allerdene three span viaduct option.

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– Biodiversity Professional Competence

Name	Role	Qualifications and Professional Membership	Experience
Jack Fenwick	Author	– BSc (Hons) – 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 – 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	– BSc (Hons) – MSc – PhD – Full member of the Chartered Institute of Ecology & Environmental Management (MCIEEM)	Technical Director with 28 years' experience in ecological consultancy: – Ecological Technical Reviewer for the A1 Morpeth to Felton and A1 Alnwick to Ellingham schemes. – Ecology Manager for Lake Lothing, Lowestoft: Suffolk County Council. Responsible for management of ecological surveys

Name	Role	Qualifications and Professional Membership	Experience
		– Member of Chartered Institute Water and Environmental Management (CIWEM) – Chartered Scientist (CSci) – Chartered Environmentalist (CEnv)	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.

4.3 LEGISLATIVE AND POLICY FRAMEWORK

4.3.1. The legislative and policy framework for Biodiversity has not changed in relation to Allerdene three span viaduct option. Therefore, the text within **Section 8.3** of **Chapter 8: Biodiversity** of the 2019 ES **[APP-029]** remains unchanged and valid.

4.4 ASSESSMENT METHODOLOGY

4.4.1. The assessment methodology for Biodiversity has not changed for Allerdene three span viaduct option. Therefore, the text within **Section 8.4** of **Chapter 8: Biodiversity** of the ES **[APP-029]** remains unchanged and valid.

4.5 ASSESSMENT ASSUMPTIONS AND LIMITATIONS

4.5.1. The assessment assumptions and limitations for Biodiversity have not changed for Allerdene three span viaduct option, with the exception of those identified in **Section 3.5** of Chapter 3 of this ES Addendum. Therefore, the text within **Section 8.5** of **Chapter 8: Biodiversity** of the ES **[APP-029]** remains unchanged and valid.

4.6 STUDY AREA

4.6.1. The Study Area for Biodiversity has not changed due for Allerdene three span viaduct option. Therefore, the text within **Section 8.6** of **Chapter 8: Biodiversity** of the ES **[APP-029]** remains unchanged and valid.

4.7 BASELINE

4.7.1. The baseline Biodiversity conditions have not altered for Allerdene three span viaduct option. Therefore, the text within **Section 8.7** of **Chapter 8: Biodiversity** of the ES **[APP-029]** remains unchanged and valid.

4.8 POTENTIAL IMPACTS

CONSTRUCTION

4.8.1. Allerdene three span viaduct option falls within a similar footprint to Allerdene viaduct option assessed in **Chapter 8: Biodiversity** of the ES **[APP-029]**. Therefore, the permanent direct loss of habitat as a result of construction is considered comparable between the two options. As such, habitat loss associated with Allerdene viaduct option presented in **Table 8-13** and Table **8-14** of **Chapter 8: Biodiversity** of the ES **[APP-029]** is applicable. Habitat loss values are also presented in **Table 4-2** below.

4.8.2. All other impacts during construction, detailed within **Section 8.8** of the ES **[APP-029]**, remain unchanged are valid.

OPERATION

4.8.3. The operation impacts for biodiversity have not changed due to the proposed amendments to the Scheme design. Therefore, the text within **Section 8.8, Table 8-16** of **Chapter 8: Biodiversity** of the ES **[APP-029]** remains unchanged and valid.

4.9 DESIGN, MITIGATION AND ENHANCEMENT MEASURES

4.9.1. With the exception of habitat creation (see below), the remainder of the design, mitigation and enhancement measures for biodiversity have not changed for Allerdene three span viaduct option. Therefore, the text within **Sections 8.9.1** to **8.9.5, 8.9.7** and **8.9.8** of **Chapter 8: Biodiversity** of the ES **[APP-029]** remains unchanged and valid.

4.9.2. Allerdene three span viaduct option would result in changes to habitat creation values (both habitat type and quantity). **Table 4-2** below summarises the habitat loss and compensation in relation to Allerdene three span viaduct option. Habitat creation for Allerdene three span viaduct option is presented in **Appendix D: Figures, Figure 7.6 – Landscape Mitigation Design**.

4.9.3. There would be no change to areas of habitat improvement. Therefore, the text within **Section 8.9.6** of **Chapter 8: Biodiversity** of the ES **[APP-029]** remains unchanged and valid.

Table 4-2 - Priority Habitat Creation Across the Scheme Footprint for Allerdene Three Span Viaduct Option

Habitat Created Joint Nature Conservation Committee (JNCC) Phase I Habitat Type	Habitat Compensated for	Total Area/Length within Scheme (Lost) (hectares/metres)	Compensation Area/Length (hectares/metres)
Broad-leaved woodland – semi-natural – A1.1.2	Broad-leaved woodland - semi-natural – A1.1.1 Broad-leaved woodland – plantation – A1.1.2 Coniferous woodland – plantation – A1.2.2 Mixed woodland – plantation – A1.3.2	13.83ha	13.94ha
Dense/continuous scrub – A2.2	Dense/continuous scrub – A2.2	1.71ha	1.71ha
Species Rich Grassland	Neutral grassland – semi-improved – B2.2	6.79ha	7.12ha
Includes all native hedgerow category	Intact hedge – species poor – J2.1.2 Defunct hedge – species poor – J.2.2.2	1797m	3791m
Hedgerow with trees – species poor – J2.3.2	Hedgerow with trees – species poor – J2.3.2	407m	407m
Running water – G2	G2 Running water - G2	552m	505m

4.10 ASSESSMENT OF LIKELY SIGNIFICANT EFFECTS

CONSTRUCTION

4.10.1. The area of woodland habitat creation would be decreased for Allerdene three span viaduct option in comparison to Allerdene viaduct option assessed in **Chapter 8: Biodiversity** of the ES **[APP-029]**. This is as a result of a reduction in the area available to compensatory planting due to the inclusion of reinforced earth slopes. However, the Landscape Mitigation Design for Allerdene three span viaduct option (**Appendix D: Figures, Figure 7.6 – Landscape Mitigation Design**), which was designed to encompass biodiversity mitigation requirements, includes the creation of approximately 13.56 hectares of semi-natural woodland to compensate for the loss of 13.83 hectares of woodland. The habitat created to compensate for this loss would be of a higher quality by creating a structure comprising varying tree ages and a management regime that creates gaps, allowing light to reach the understorey layer in patches. However, the newly created woodland habitat would take time to establish and would not result in a biodiversity net gain. It is therefore considered that the loss of woodland habitat would result in a direct, adverse impact.

4.10.2. Due to the allocation of species rich grassland, habitat creation is approximately 0.7 hectares greater than the area of neutral grassland permanently lost to the Scheme. The loss of neutral grassland is considered a temporary, adverse impact. However, once established, the species rich grassland creation would represent a permanent, beneficial impact.

4.10.3. Following the successful implementation of the mitigation requirements, the loss of terrestrial habitat as a result of the Scheme is considered to be a **moderate adverse effect**, which is the same as that assessed within **Section 8.10.8** of **Chapter 8: Biodiversity** of the ES **[APP-029]**.

4.10.4. All other likely significant effects during construction are as presented in **Section 8.10** of the ES **[APP-029]**.

OPERATION

4.10.5. The operation impacts for biodiversity have not changed due to the proposed amendments to the Scheme design. Therefore, the text within **Sections 8.10.19** to **8.10.31** of the ES **[APP-029]** remains unchanged and valid.

4.11 MONITORING

4.11.1. The monitoring requirements for Biodiversity have not changed for Allerdene three span viaduct option. Therefore, the text within **Section 8.11** of **Chapter 8: Biodiversity** of the ES **[APP-029]** remains unchanged and valid.

5 SUMMARY

5.1 INTRODUCTION

5.1.1. **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]**.

5.1.2. A summary of the likely significant effects as a result of Allerdene three span viaduct option is presented below. All other conclusions within **Chapter 16: Summary** of the ES **[APP-037]** remain valid.

5.2 SUMMARY OF LIKELY SIGNIFICANT EFFECTS

LANDSCAPE AND VISUAL

5.2.1. The assessment of landscape effects has determined that during construction landscape effects would not be materially different to those reported for Allerdene embankment option, within **Chapter 7: Landscape and Visual** of the ES **[APP-028]**.

5.2.2. Similarly, the visual effects for Allerdene three span viaduct option would be comparable to the effects arising during the construction of Allerdene embankment option.

5.2.3. Following construction and in winter Year 1, the landscape effects would be comparable to those experienced as a result of the construction of the Allerdene embankment option. Due to a lack of planting, with the exception of grass, the effect of the Allerdene three span viaduct option in the summer of Year 15 would remain comparable to the Allerdene embankment option in winter Year 1.

5.2.4. Following construction and in winter Year 1 the visual impacts would be comparable to those previously reported for Allerdene embankment option, with the combined impact of the engineered soil embankment and viaduct structure of Allerdene three span viaduct option giving rise to significant effects (**moderate adverse**) on receptors to the south and south west of the Allerdene bridge (refer to **Table 7-15** within **Chapter 7: Landscape and Visual** of the ES **[APP-028]**).

5.2.5. In the summer of Year 15 the visual effects would be comparable to those experienced as a result of Allerdene embankment option in winter Year 1 (refer to **Table 7-15** within **Chapter 7: Landscape and Visual** of the ES **[APP-028]**). Overall the significance of effects reported within **Chapter 7: Landscape and Visual** of the ES **[APP-028]** remains valid and unchanged.

BIODIVERSITY

5.2.6. Allerdene three span viaduct option, as outlined in **Chapter 2: The Scheme** of this ES Addendum, would result in no change to the conclusions of the assessment of construction effects reported in **Chapter 8: Biodiversity** of the ES **[APP-029]**.

5.3 CONCLUSION

5.3.1. The assessments presented in this ES addendum have concluded that although the impacts vary with the Allerdene three span viaduct option, overall this option would not alter the findings of the ES with comparable effects anticipated compared to those assessed previously.

6 ABBREVIATIONS

Acronym	Definition
CEnv	Charted Environmentalist
CIEEM	Chartered Institute of Ecology and Environmental Management
CIWEM	Charted Institute of Water and Environmental Management
CMLI	Chartered member of the Landscape Institute
CSci	Chartered Scientist
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
HRA	Habitats Regulations Assessment
JNCC	Joint Nature Conservation Council
LLCA	Local Landscape Character Area
LVIA	Landscape and Visual Impact Assessment
NTS	Non-Technical Summary
REAC	Record of Environmental Actions and Commitments

7 REFERENCES

Ref. 1.1 The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017. Available at: http://www.legislation.gov.uk/uksi/2017/572/contents/made

Ref 1.2 The Planning Act 2008. Available at: https://www.legislation.gov.uk/ukpga/2008/29/contents

Ref 3.1 LA 107 - Landscape and visual effects (formerly DMRB Volume 11 Section 3 Part 5 Landscape Effects and IAN 135/10), Revision 2, February 2020 https://www.standardsforhighways.co.uk/ha/standards/DMRB/vol11/section3/LA%20107%20revision%202%20Landscape%20and%20visual%20effects-web.pdf

Appendix A

ALLERDENE THREE SPAN VIADUCT OPTION: SENSITIVITY APPRAISAL AND SCOPING REPORT

CONTENTS

TABLES

APPENDIX A.1

1. INTRODUCTION

1.1. PURPOSE OF THE REPORT

1.1.1. This document supports a request to amend an application for development consent.

1.1.2. An Environment Statement (ES) was submitted to the Planning Inspectorate (PINS) on 14 August 2019 as part of a Development Consent Order (DCO) application (the Application) for the A1 Birtley to Coal House Scheme (the Scheme). 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. 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.

1.1.5. The proposed amendment to the Application that this document related to is as follows:

a. The inclusion of further design flexibility in relation to the proposed replacement Allerdene Railway Bridge. The draft DCO [**APP-013**] currently allows for the replacement of Allerdene Railway Bridge by a single span integral bridge (Allerdene embankment option) or a 6/7-span viaduct (Allerdene viaduct option). It is further proposed to enable the inclusion of a design for a three span viaduct (Allerdene three span viaduct option) under the DCO. The details for Allerdene three span viaduct option are described in Section 2 of this report and the scheme drawings are shown on Sheet 6 of the Structures Engineering Drawings and Sections [**APP-011**]. The assessment of significance of these changes are detailed in **Table 4-2** of **Section 4**, of this report.

1.1.6. In order to understand if there would be significant environmental effects as a result of this option when compared against the two options assessed in the ES, a sensitivity appraisal has been carried out. The purpose of the appraisal has been to consider whether the three span viaduct option would alter the conclusion of the EIA already undertaken. The outcome of the sensitivity appraisal has then informed a scoping exercise to identify if further EIA, in accordance with the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017, would be required. The outcome of the sensitivity appraisal is detailed in **Table 4-2** of **Section 4**, of this report.

1.2. APPROACH TO THE ASSESSMENT

1.2.1. This document is a Sensitivity Assessment / Scoping Report 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 the ES. 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 **Section 4.2** of this report.

1.2.2. The Assumptions and Limitations that have informed this Sensitivity Assessment and Scoping Report are detailed in **Section 7** below.

1.3. ES ADDENDUM: ALLERDENE THREE SPAN VIADUCT OPTION

1.3.1. Following completion of this Sensitivity Assessment and Scoping Report, a full assessment of those topics that were “scoped-in” to the assessment has been carried out.

1.3.2. This Sensitivity Assessment and Scoping Report therefore now forms an Appendix (Appendix A) to the Allerdene three span viaduct option ES Addendum [**EXA/D4/011**] and information within the Allerdene three span viaduct option ES Addendum has not been repeated here. As such this Sensitivity Assessment and Scoping Report should be read in conjunction with the Allerdene three span viaduct option ES Addendum.

2. THE SCHEME

2.1.1. For details regarding the Scheme, see **Section 2: The Scheme** of the Allerdene three span viaduct option ES Addendum.

2.1.2. Scheme drawings are presented in **Appendix D: Figures, General Arrangement Drawings** of the Allerdene three span viaduct option ES Addendum **EXA/D4/011**].

3. CONSULTATION

3.1.1. Consultation has been carried out during the production of this report where likely significant effects were identified. 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

Topic	Date / Method of Contact	Consultee / Name of Consultee	Overview of Consultation
Gateshead Council			
Landscape and Visual	27/01/2020 – Telephone	Janet Charlton-Gateshead Council	Gateshead Council stated that they would not discuss Allerdene three span viaduct option further until additional information had been provided and following a decision from PINS on whether it is being considered within the Application.
Landscape and Visual	18/02/2020 (Email)	Janet Charlton-Gateshead Council	Gateshead Council agreed the proposed scope for the additional landscape and visual assessment of Allerdene three span viaduct option. The landscape and visual aspects scoped in are: Landscape character construction (daytime and night time); Landscape character operation; Visual Amenity construction (daytime and night time) and Visual Amenity operation.

4. ALLERDENE THREE SPAN VIADUCT OPTION SENSITIVITY ASSESSMENT AND SCOPING REPORT

4.1. INTRODUCTION

4.1.1. This sensitivity assessment has been carried out in order to understand if there is likely to be any difference, specifically any worsening, of the likely significant effects as a result of differences of Allerdene three span viaduct option when compared with Allerdene embankment option and Allerdene viaduct option. The results of the sensitivity assessment have then informed a scoping exercise to identify if further EIA, in accordance with the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017, would be required.

4.1.2. The outcome of this sensitivity appraisal is reported in **Table 4-2** herein.

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. The competent expert advisors for all other topics not included in **Table 4-1** have not changed for the production of this sensitivity assessment. The competent expert evidence for the topics not included in **Table 4-1**, remains unchanged and valid in the ES.

Table 4-1 – New Competent Expert Evidence

Topic	Name	Role	Qualifications and Professional Membership	Experience
Cultural Heritage	Elizabeth Murray	Author	- BA (Hons) Archaeology	Five years of relevant EIA experience. Relevant project examples include: - Heritage specialist on M3 Junction 9 - Heritage specialist on A30 Carland Cross to Chiverton - Heritage specialist on M271 Redbridge Roundabout
Cultural Heritage	Sally Hales	Reviewer	- BA (Hons) Archaeology, MA Archaeology - Member of the Chartered Institute for Archaeologists (MCIfA)	25 years professional archaeology experience Sally is Heritage Team - 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 Inquiry - Heritage lead and technical reviewer for A1 Alnwick to Ellingham and Morpeth to Felton schemes

Topic	Name	Role	Qualifications and Professional Membership	Experience
Landscape and visual	Andrew Williams	Author	- BA(Hons) Landscape Architecture - Grad Dip (Landscape Architecture) - Chartered Membership of the Landscape Institute (CMLI)	24 years' experience preparing landscape and visual impact assessments for numerous highways schemes including: - A9 Dualling Tomatin to Moy (statutory EIA) - Oxon Link Road (statutory EIA) - East Leeds Orbital Road (statutory EIA)
Landscape and visual	Chris Rance	Reviewer	- BSc (Hons) Natural Environmental Science with Landscape Studies - MA Conservation Policy - MA Landscape Management - Chartered Membership of the Landscape Institute (CMLI)	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)
Biodiversity	Jack Fenwick	Author	- Bachelor of Science (Honours) - Full Member of the Chartered Institute of Ecology and	Principal Ecologist with over 7 years' experience in ecological consultancy and impact assessment. Relevant project experience includes - Lead Ecologist for the A1 in Northumberland: Morpeth to Felton scheme Ecological

Topic	Name	Role	Qualifications and Professional Membership	Experience
			Environmental Management (MCIEEM)	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
Biodiversity	Andy Bascombe	Reviewer	- BSc (Hons) - MSc - PhD - Member of the Chartered Institute of Ecology & Environmental Management (MCIEEM) - Member of Chartered Institute Water and Environmental Management - Chartered Scientist - Chartered Environmentalist	Technical Director with 28 years' experience in ecological consultancy: - Ecological Technical Reviewer for the A1 Morpeth 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.

Topic	Name	Role	Qualifications and Professional Membership	Experience
Geology and Soils	Verity Curtis	Author	- MSc Environmental Protection - Member of the Institute of Environmental Sciences (IES)	Environmental Consultant with 19 year's experience. Relevant project examples include: - 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).
Geology and Soils	Andrew McCusker	Reviewer	- Chartered Engineer (CEng - Member of Institute of Chartered Engineers (MICE) - Chartered Environmentalist (CEnv) - Specialist in Land Condition	Technical Director with over 27 years' experience. Relevant projects examples include: - 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

Topic	Name	Role	Qualifications and Professional Membership	Experience
			- Suitably Qualified Person	
Noise and vibration	Toby Lewis – Technical Director	DCO Lead (author)	- 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 - Fellow of the Institute of Acoustics - Member of the Chartered Institute of Environmental Health	28 years' experience in acoustics. Relevant project experience includes: - 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 and submissions to the Public Inquiry (Roxhill 2016 – 2018)

Topic	Name	Role	Qualifications and Professional Membership	Experience
			- Member of the Institution of Environmental Sciences - Member of the Institute of Air Quality Management	
Noise and vibration	Jim Powlson - Associate Director	Original ES Author, DCO support and reviewer	- BSc (Hons) Audio Technology, First Class - Member of the Institute of Acoustics (MIOA)	Over 15 years' experience in Acoustic consultancy and EIA. - Preparation of Clyde Waterfront and Renfrew Riverside Design Manual for Roads and Bridges (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).
Climate	Alice Berry	Author (Climate resilience)	- MSc - BSc (Hons.)	2 years' experience in environmental consultancy. Relevant project examples include:

Topic	Name	Role	Qualifications and Professional Membership	Experience
			- Graduate member of Institute of Environmental Management Assessment (GradIEMA)	- 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
Climate	Stephanie Hands	Reviewer (Climate resilience)	- MEnvSci - Practitioner member of Institute of Environmental Management Assessment (PIEMA)	4 years' experience in environmental consultancy. Relevant project examples include: - Climate Lead on Shrewsbury North West Relief Road - Climate Resilience Specialist on Aquind Interconnector - Climate Lead A1 in Northumberland: Alnwick to Ellingham - Climate Resilience Specialist A59 Kex Gill Diversion Scheme
Climate	James Peet	Reviewer (Greenhouse gases)	- MSc - BSc (Hons.)	Over 8 years' experience. Relevant project examples include: - James has authored or technically reviewed approximately 30 Greenhouse Gas (GHG)

Topic	Name	Role	Qualifications and Professional Membership	Experience
				assessments for EIA, including in the transport sector. - Coordinator and reviewer for A27 Arundel improvements EAR, A31 EAR, A1 A2E EIA.

4.3. ALLERDENE THREE SPAN VIADUCT OPTION SENSITIVITY ASSESSMENT AND SCOPING REPORT

Table 4-2 - Allerdene Three Span Viaduct Option Sensitivity Assessment and Scoping Report

Aspect of Assessment	Potential Impacts	Construction / Operation	Potential Mitigation	Likely Significant Effects	Scoped In / Out	Justifications for Topics Scoped In / Out
Air Quality						
Dust and particulate matter from construction of embankments	Construction activities may result in nuisance dust and increased Particulate Matter (PM) concentrations at adjacent residential receptors. The construction of Allerdene three span viaduct option has a similar capacity for dust generation as the Allerdene viaduct option assessed in the ES **Chapter 5: Air Quality [APP-026]**, although this would occur over a shorter timeframe. The construction programme would reduce from 36 months to 30 months, which would in turn reduce the risk of impacts. There would be no change to the numbers of receptors potentially affected compared to Allerdene embankment option and Allerdene viaduct option.	Construction	No additional mitigation is anticipated to be required over and above that identified in **Chapter 5: Air Quality** of the ES **[APP-026]**.	There is no change in the likely significant effects for the Allerdene three span viaduct option compared to the options previously assessed in **paragraph 5.10.**1 of **Chapter 5: Air Quality** of the ES **[APP-026]**. The effect would remain not significant.	Out	The effects on air quality would be no worse than those assessed for Allerdene embankment option and Allerdene viaduct option as reported in **paragraph 5.10.1** of **Chapter 5: Air Quality** of in the ES **[APP-026]**. This is because with the application of mitigation measures and good practice during construction, no significant effects are anticipated.
Emissions from construction traffic	The construction of the Allerdene three span viaduct option is not expected to significantly affect the numbers of construction vehicles compared to the options assessed for the ES in the air quality context (annual average daily traffic). There would be fewer vehicle movements compared to the embankment option as there would be less earthworks material required.	Construction	No additional mitigation is anticipated to be required over and above that identified in **Chapter 5: Air Quality** of the ES **[APP-026]**.	There is no change in the likely significant effects for the Allerdene three span viaduct option compared to the options previously assessed in the ES **paragraph 5.10.2** of **Chapter 5: Air Quality** of the ES **[APP-026]**.This is because no affected routes were identified during construction for	Out	The effects on air quality would be no worse than those assessed for Allerdene embankment option and Allerdene viaduct option as reported in **paragraph 5.10.2** of **Chapter 5: Air Quality** of the ES **[APP-026]**. This is because there would be no change in traffic flows during construction.

Aspect of Assessment	Potential Impacts	Construction / Operation	Potential Mitigation	Likely Significant Effects	Scoped In / Out	Justifications for Topics Scoped In / Out
				Allerdene embankment option and Allerdene viaduct option and this is unlikely to change with the Allerdene three span viaduct option. The effect would remain not significant.		
Emissions from operational traffic	Changes in emissions from traffic and hence changes to roadside pollutant concentrations.	Operation	No additional mitigation is anticipated to be required over and above that identified in **Chapter 5: Air Quality** the ES **[APP-026]**.	There is no change in the likely significant effects for the Allerdene three span viaduct option compared to the options previously assessed in the ES **paragraph 5.10.4** of **Chapter 5: Air Quality [APP-026]**. This is because there would be no change in traffic flows or speeds as a result of the design change. The effect would remain not significant.	Out	Once operational there would be no difference in the operational effects of the Scheme on air quality as traffic flows and speeds would be the same as those assessed in **Chapter 5: Air Quality** of the ES **[APP-026]**. The effects reported in the ES **paragraph 5.10.4** in **Chapter 5: Air Quality** of the ES **[APP-026]** would therefore remain not significant.
Cultural Heritage						
Lamesley Village Conservation Area (CA)	Impacts to setting due to construction activities.	Construction	No additional mitigation is anticipated to be required over and above that identified in **Section 6.9** of **Chapter 6: Cultural Heritage** of the ES **[APP-027]**.	There is no change in the likely significant effects for the Allerdene three span viaduct option compared to the options previously assessed in the ES **paragraph 6.10.6** of **Chapter 6: Cultural Heritage [APP-027]**. This is because with the application of mitigation and good practice measures during construction the effect	Out	There would be no change to the significance of effects reported in **Chapter 6: Cultural Heritage** of the ES **[APP-027]** as a result of the Allerdene three span viaduct option. This is because the construction activities associated with Allerdene three span viaduct option are comparable with the Allerdene viaduct option and the Allerdene embankment option as assessed in the ES. The effects on the setting of Lamesley Village CA during construction reported in the ES **paragraph 6.10.6** of **Chapter 6: Cultural Heritage** of the ES **[APP-027]** would therefore remain not significant.

Aspect of Assessment	Potential Impacts	Construction / Operation	Potential Mitigation	Likely Significant Effects	Scoped In / Out	Justifications for Topics Scoped In / Out
				would remain not significant.		
Lamesley Village Conservation Area	Impacts to setting due to a presence of Allerdene three span viaduct option which would obstruct views to the north.	Operation	Due to the proposed use of a reinforced soil slope, the capacity to include a planting strategy, similar to that proposed for the Allerdene embankment option, is substantially reduced and the slopes could be seeded with grass to provide a green slope that would remain a noticeably engineered solution within the landscape. However, a reduced footprint compared to the Allerdene embankment option could also allow tree or woodland planting to extend along the toe of the slope. This would be a long term measure such that views of the engineered slope would be softened.	There would be a **minor adverse** impact to the setting of Lamesley Village CA however this would not be significant, and the effect would remain **slight adverse** (not significant) as previously assessed in the ES **paragraph 6.10.15** of **Chapter 6: Cultural Heritage** of the ES **[APP-027]**.	Out	There would be no change to the significance of effects reported in **Chapter 6: Cultural Heritage** of the ES **[APP-027]** as a result of the Allerdene three span viaduct option. This is because of the adoption of the **Figure 7.6: Landscape Mitigation Design** detailed in of the ES **[APP-061]**. The effects on the setting of Lamesley Village CA during operation reported in the ES **paragraph 6.10.15** in **Chapter 6: Cultural Heritage** of the ES **[APP-027]** would therefore remain not significant.
Landscape and Visual						
Landscape Character	Impacts during construction are anticipated to be comparable to those arising as a result of the Allerdene embankment option and would be temporary as reported, in **Section 7.8** of the ES **Chapter 7: Landscape and Visual [APP-028]**.	Construction	No additional mitigation is anticipated to be required over and above that identified in **Section 7.9** of **Chapter 7: Landscape and Visual** of the ES **[APP-028]**.	The effect would be comparable to that identified in **paragraphs 7.10.2-7.10.4** of **Chapter 7: Landscape and Visual** of the ES **[APP-028]** for the Allerdene embankment option and would be **moderate adverse** (significant).	In	The construction of the Allerdene three span viaduct option has the potential to give rise to an effect (significant) comparable to the Allerdene embankment option but may be different due to a shorter construction period, therefore an assessment to understand the implications of this would be appropriate.

Aspect of Assessment	Potential Impacts	Construction / Operation	Potential Mitigation	Likely Significant Effects	Scoped In / Out	Justifications for Topics Scoped In / Out
Landscape Character	Permanent impacts arising would be comparable to those experienced as a result of the Allerdene embankment option in the winter of opening year and would remain due to a reduced capacity to incorporate trees and shrubs to the reinforced soil slopes in comparison to the Allerdene embankment option.	Operation	It would not be possible to plant trees or shrubs across the engineered soil slopes, therefore the slopes would grassed. A reduced footprint compared to the Allerdene embankment option assessed in **Chapter 7: Landscape and Visual** of the ES **[APP-028]**, could allow tree or woodland planting to extend along the toe of the slope, however this would be a long term measure, +15 years, such that views of the engineered slope would, over time be softened.	The permanent effect on the landscape as a result of Allerdene three span viaduct option would be comparable to the **moderate adverse** (significant) effect identified in **Chapter 7: Landscape and Visual** of the ES **[APP-028]** for Allerdene viaduct option in the winter of opening year.	In	The design of the Allerdene three span viaduct option has the potential to give rise to an effect (significant) comparable to the Allerdene embankment option but may be different due to a limitation on the capacity of the slope to be planted, therefore an assessment to understand the implications of this would be appropriate. To align with the approach taken in **Chapter 7: Landscape and Visual** of the ES **[APP-028]**, this should be assessed for winter and summer effects on Landscape Character, as assessed with the Allerdene viaduct option and Allerdene embankment option.
Visual Amenity	Viewpoint R7 (Lamesley Road: North Farm, 1-4 The Courtyard) and R8 (Lamesley Road: 4-6 The Cottages, The Vicarage, Temple Meads) would experience impacts during construction comparable to those identified for Allerdene embankment option.	Construction	No additional mitigation is anticipated to be required over and above that identified in **Section 7.9** of **Chapter 7: Landscape and Visual** of the ES **[APP-028]**.	Significant effects of **large adverse** (significant) are anticipated to arise as a result of Allerdene three span viaduct option and are comparable to those anticipated to occur as a result of the Allerdene embankment option assessed in **paragraph 7.10.65** of **Chapter 7: Landscape and Visual** of the ES **[APP-028]**.	In	The construction of the Allerdene three span viaduct option has the potential to give rise to significant effects on visual amenity and an assessment would be appropriate.
Visual Amenity	View point R7 (Lamesley Road: North Farm, 1-4 The Courtyard) and R8 (Lamesley Road: 4-6 The Cottages, The Vicarage, Temple Meads) would experience impacts during operation comparable to those identified as occurring as	Operation	It would not be possible to plant trees or shrubs across the engineered soil slopes; therefore, the slopes would be grassed. A reduced footprint compared to Allerdene embankment	A **moderate adverse** effect (significant) would arise in the Winter Year of Opening and would be comparable to the effect of the Allerdene embankment option presented in **paragraph**	In	The presence of the Allerdene three span viaduct option during operation has the potential to give rise to significant effects on visual amenity and should be assessed in detail for daytime and night time effects and winter and summer views. It has the potential to be comparable to the Allerdene viaduct option assessed in the ES and therefore should be subject to an assessment.

Aspect of Assessment	Potential Impacts	Construction / Operation	Potential Mitigation	Likely Significant Effects	Scoped In / Out	Justifications for Topics Scoped In / Out
	a result of the Allerdene embankment option in the Year of Opening, and as a result of being unable to plant the engineered soil slopes would remain so in the Summer Design Year.		option assessed in **Chapter 7: Landscape and Visual** of the ES **[APP-028]**, could allow tree or woodland planting to extend along the toe of the slope, however this would be a long term measure, +15 years, such that views of the engineered slope would be softened.	**7.10.77** of **Chapter 7: Landscape and Visual** of the ES **[APP-028]**. However due to the absence of planting across the engineered soil slopes, the effect would remain **moderate adverse** (significant) in the Summer Design Year and has the potential to be worse than that identified as arising as a result of the Allerdene embankment option. It would be comparable to the effect identified as arising as a result of the Allerdene viaduct option (**paragraph 7.10.88** of **Chapter 7: Landscape and Visual** of the ES **[APP-028]**).		
Biodiversity						
Statutory and non-statutory sites	The impacts as a result of habitat loss in the Green Wildlife Corridor would be comparable to Allerdene embankment option and Allerdene viaduct option aspresented in **Table 8-15** of **Chapter 8: Biodiversity** of the ES **[APP-029]** and Addendum 1 to Volume 1 of the ES **[AS-016]**.	Construction	The Landscape Mitigation Design detailed in **Figure 7.6** of the ES **[APP-029]** provide a green corridor of woodland and treeline linking the existing woodland at Robin's Wood to the River Team and enhance the wildlife corridors between Longacre Wood LWS and the existing wildlife corridor to the north, this would remain unchanged for Allerdene three span viaduct option. As such no	The effects on the Green Wildlife Corridor during construction would be comparable to Allerdene embankment option and Allerdene viaduct option considered in **paragraph 8.10.6** of **Chapter 8: Biodiversity** of the ES **[APP-029]** and Addendum 1 to Volume 1 of the ES **[AS-016]**.. This is because impacts to statutory and non-statutory sites (namely River Teams LWS and Lamesley	Out	There would be no change to the significant effects reported in **Chapter 8: Biodiversity** of the ES **[APP-029]** or Addendum 1 to Volume 1 of the ES **[AS-016]** as a result of the Allerdene three span viaduct option. The effects on the Green Wildlife Corridor during construction reported in **paragraph 8.10.6** in **Chapter 8: Biodiversity** of the ES **[APP-029]** would therefore remain not significant.

Aspect of Assessment	Potential Impacts	Construction / Operation	Potential Mitigation	Likely Significant Effects	Scoped In / Out	Justifications for Topics Scoped In / Out
			additional mitigation is anticipated to be required over and above that identified in section 8.9 of **Chapter 8: Biodiversity** of the ES **[APP-029]**.	Meadows LWS) in relation to the Allerdene three span viaduct option are comparable to that to the Allerdene viaduct option assessed in **Chapter 8: Biodiversity** of the ES **[APP-029]** and Addendum 1 to Volume 1 of the ES **[AS-016]**. The effects on Statutory and non-Statutory sites during construction would remain as **slight adverse** significance (not significant).		
Statutory and non-statutory sites	There would be no potential impacts on statutory and non-statutory sites identified which is the same as for Allerdene embankment option and Allerdene viaduct option. As such, potential impacts identified in **Table 8-16** of **Chapter 8: Biodiversity** of the ES **[APP-029]** and Addendum 1 to Volume 1 of the ES **[AS-016]** are valid.	Operation	No additional mitigation is anticipated to be required over and above that identified in section 8.9 of **Chapter 8: Biodiversity** of the ES **[APP-029]**.	There would be no change to the conclusions in relation to impacts on statutory and non-statutory sites in **Chapter 8: Biodiversity** of the ES **[APP-029]** and Addendum 1 to Volume 1 of the ES **[AS-016]** as a result of the Allerdene three span viaduct option. This is because impacts to statutory and non-statutory sites (namely River Teams LWS and Lamesley Meadows LWS) in relation to the Allerdene three span viaduct option are comparable to that to the Allerdene viaduct option assessed in **Chapter 8: Biodiversity** of the ES **[APP-029]** and **Addendum 1 to Volume 1** of the ES	Out	There would be no change to the significant effects reported in **Chapter 8: Biodiversity** of the ES **[APP-029]** and **Addendum 1 to Volume 1** of the ES **[AS-016]** as a result of the Allerdene three span viaduct option. The effects on the statutory and non-statutory sites during operation reported in **paragraph 8.10.19 - 8.10.21 Chapter 8: Biodiversity** of the ES **[APP-029]** and **paragraphs 3.10.4 – 3.10.6** of Addendum 1 to Volume 1 of the ES **[AS-016]** would therefore remain not significant.

Aspect of Assessment	Potential Impacts	Construction / Operation	Potential Mitigation	Likely Significant Effects	Scoped In / Out	Justifications for Topics Scoped In / Out
				[AS-016].The effects on the statutory and non-statutory sites during operation reported in **paragraph 8.10.19 - 8.10.21** in **Chapter 8: Biodiversity** of the ES **[APP-029]** and **paragraphs 3.10.4 – 3.10.6** of **Addendum 1 to Volume 1** of the ES **[AS-016]** would therefore remain not significant.		
Habitats	Allerdene three span viaduct option falls within a similar footprint to Allerdene viaduct option assessed in **Chapter 8: Biodiversity** of the ES **[APP-029]**. Therefore, the permanent direct loss of habitat as a result of construction is considered comparable between Allerdene viaduct option and Allerdene three span viaduct option. As such, habitat loss associated with Allerdene viaduct option presented in **Tables 8-13 and 8-14** of **Chapter 8: Biodiversity** of the ES **[APP-029]** is applicable for Allerdene three span viaduct option and there would be no changes to the potential impacts identified in **Table 8-15** of the ES **[APP-029]**.	Construction	It is assumed that there would be no additional land available for planting and therefore no further additional mitigation or compensation would be provided. If additional land was made available, this would reduce the significance of effects.	It would not be possible to plant trees or shrubs across the engineered soils slopes and therefore the slopes would be grassed. A reduced footprint could however allow tree or woodland planting to extend along the toe of the embankment. As a result of the use of reinforced earth slopes for the Three span viaduct option there would be less woodland planting when compared to the options assessed in **Chapter 8: Biodiversity** of the ES **[APP-029]**. Given the small area concerned the effect of this loss is considered to remain as per **Chapter 8: Biodiversity** of the ES **[APP-029]** and would be a **moderate adverse** effect (significant).	In	Habitat loss and creation calculations require updating to understand the impacts of the Scheme on Habitats of Principal Importance (HPI) and if the Scheme meets obligations for habitat compensation under the Natural Environment and Rural Communities (NERC) Act 2006.

Aspect of Assessment	Potential Impacts	Construction / Operation	Potential Mitigation	Likely Significant Effects	Scoped In / Out	Justifications for Topics Scoped In / Out
Habitats	There would be no change to impacts on habitats identified in comparison to Allerdene embankment option and Allerdene viaduct option. As such, potential impacts identified in **Table 8-16** of **Chapter 8: Biodiversity** of the ES **[APP-029]** and Addendum 1 to Volume 1 of the ES **[AS-016]** are valid.	Operation	No additional mitigation is anticipated to be required over and above that identified in **Chapter 8: Biodiversity** of the ES **[APP-029]**.	There would be no change to the conclusions in **Chapter 8: Biodiversity** of the ES **[APP-029]** in relation to impacts on habitats during operation. This is because it is anticipated that habitat loss for the Allerdene three span viaduct option is comparable to that for the Allerdene viaduct option assessed in **Chapter 8: Biodiversity** of the ES **[APP-029]**. In addition, it is assumed that habitat compensation would not alter significantly.	In	Due to the change in habitat creation allocation, the potential impacts during operation are scoped into the assessment.
Protected and notable species	Impacts to protected and notable species would be comparable to the options assessed in **Chapter 8: Biodiversity** of the ES **[APP-029]**.	Construction	No additional mitigation is anticipated to be required over and above that identified in **Chapter 8: Biodiversity** of the ES **[APP-029]**.	There would be no change to the conclusions in **Chapter 8: Biodiversity** of the ES **[APP-029]** and would remain as **slight adverse** significance (not significant). This is because impacts are considered comparable to Allerdene viaduct option assessed in **Chapter 8: Biodiversity** of the ES **[APP-029]**. The effects on protected and notable species during construction reported in **paragraph 8.10.10-8.10.18** in **Chapter 8: Biodiversity** of the ES **[APP-029]** would therefore remain not significant.	Out	No additional impacts are predicted, and the impact assessment presented in **Chapter 8: Biodiversity** of the ES **[APP-029]** is considered valid.

Aspect of Assessment	Potential Impacts	Construction / Operation	Potential Mitigation	Likely Significant Effects	Scoped In / Out	Justifications for Topics Scoped In / Out
Protected and notable species	No potential impacts on protected and notable species are anticipated.	Operation	No additional mitigation is anticipated to be required over and above that identified in **Chapter 8: Biodiversity** of the ES **[APP-029]**.	There would be no change to the conclusions in **Chapter 8: Biodiversity** of the ES **[APP-029]**. in relation to impacts on protected and notable species during operation. This is because impacts are considered comparable to Allerdene viaduct option assessed in **Chapter 8: Biodiversity** of the ES **[APP-029]**. The effects on protected and notable species during operation reported in **paragraph 8.10.25-8.10.31** in **Chapter 8: Biodiversity** of the ES **[APP-029]** would therefore remain not significant.	Out	No additional impacts are predicted, and the impact assessment presented in **Chapter 8: Biodiversity** of the ES **[APP-029]** is considered valid.
Geology and Soils						
Reduction in Agricultural Soil Quality	The area of land take associated with Allerdene three span bridge would be less than Allerdene embankment option which is marginally greater than the impacts on Grade 3b soil in comparision to Allerdene viaduction option. Therefore the potential impacts on Grade 3b agricultural soils are considered to be less than that for Allerdene embankment option.	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]**.	There would be no change to the effects reported in **Chapter 9: Geology and Soils** of the ES **[APP-030]** as a result of the Allerdene three span viaduct option which would remain as a minor to negligible adverse effect (not significant).	Out	No additional impacts are predicted, and the impact assessment presented in **Chapter 9: Geology and Soils** of the ES **[APP-030]** is considered valid.
Detriment to Human Health	The area associated with the Three span viaduct option is not in an area where contaminants potentially	Construction	No additional mitigation is anticipated to be required over and above that identified in **Chapter**	There would be no change to the effects reported in **Chapter 9: Geology and Soils** of	Out	No additional impacts are predicted as the area is not in an area identifed as a potential source of contaminated land and therefore the assessment of significant effects presented in

Aspect of Assessment	Potential Impacts	Construction / Operation	Potential Mitigation	Likely Significant Effects	Scoped In / Out	Justifications for Topics Scoped In / Out
	posing unacceptable risks to human health have been identified which is the same as Allerdene embankment option and Allerdene viaduct optiontherefore no potential impacts on human health are anticipated.		**9: Geology and Soils** of the ES **[APP-030]**.	the ES **[APP-030]** as a result of the Allerdene three span viaduct option, and there would continue to be no effect on human health receptors.		**Chapter 9: Geology and Soils** of the ES **[APP-030]** is considered valid.
Migration of Hazardous Ground Gas Causing an Explosion	No hazardous ground gas related risks have been identifed which is the same as Allerdene embankment option and Allerdene viaduct options. As such no hazardous ground gas impacts are anticipated.	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]**.	There would be no change to the effects reported in **Chapter 9: Geology and Soils** of the ES **[APP-030]** as a result of the Allerdene three span viaduct option and these would remain neglibible.	Out	No additional impacts are predicted and therefore the assessment of significant effects presented in **Chapter 9: Geology and Soils** of the ES **[APP-030]** is considered valid.
Ground Instability	Drilling and grouting of shallow legacy coal mining voids wwould be required for Allerdene three span option. This would be less than that required for Allerdene embankment option and no change in the impacts identified in **Table 9-14** in **Chapter 9: Geology and Soils** of the ES [**APP-030**] is anticipated.	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]**.	There would be no change to the effects reported in **Chapter 9: Geology and Soils** of the ES **[APP-030]** as a result of the Allerdene three span viaduct option.	Out	No additional impacts are predicted as stabalisation of legacy mine workings will be required for both bridge options therefore the assessment of significant effects presented in **Chapter 9: Geology and Soils** of the ES **[APP-030]** is considered valid.
Pollution to controlled water bodies	Undertaking earthworks in close vicinity to sensitive surface water courses could potentially impact surface water quality. It is however anticipated that these impacts would be less than for Allerdene embankment option due to the reduced scale of the earthworks, and corresponding	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]**.	There would be no change to the effects reported in **Chapter 9: Geology and Soils** of the ES **[APP-030]** as a result of the Allerdene three span viaduct option. This is because the earthworks would be reduced or similar to	Out	There would be no change to the effects reported in **Chapter 9: Geology and Soils** of the ES **[APP-030]** as a result of the Allerdene three span viaduct option. This is because the earthworks would be reduced in comparison to Allerdene embankment option assessed in the ES. The effects on controlled water bodies during construction reported in **Chapter 9: Geology and Soils**, **paragraph 9.10.17** of the ES **[APP-030]** would therefore remain not significant.

Aspect of Assessment	Potential Impacts	Construction / Operation	Potential Mitigation	Likely Significant Effects	Scoped In / Out	Justifications for Topics Scoped In / Out
	reduced associated generation potential for silt laden runoff			Allerdene embankment option and Allerdene viaduct option assessed in the ES. The effects on controlled water bodies during construction reported in **Chapter 9: Geology and Soils**, **paragraph 9.10.17** of the ES **[APP-030]** would therefore remain not significant. The direct, temporary effect on controlled water receptors of **minor to negligible** significance (not significant).		
Controlled water bodies	The potential for leaks and spills on the carriageway impacting surrounding surface water bodies would be no different for Allerdene three span option when compared to Allerdene embankment option and Allerdene viaduct option.	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]**.	There would be no change to the effects reported in Chapter 9: Geology and Soils of the ES [APP-030] as a result of the Allerdene three span viaduct option which would remain as a minor to negligible adverse effect (not significant).	Out	No additional impacts are predicted, and the impact assessment presented in **Chapter 9: Geology and Soils** of the ES **[APP-030]** is considered valid.
Maintenance workers	Impacts on the health of maintenance workers would be no different for Allerdene three span option when compared to Allerdene embankment option and Allerdene viaduct option.	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]**.	There would be no change to the effects reported in **Chapter 9: Geology and Soils** of the ES **[APP-030]** as a result of the Allerdene three span viaduct option.	Out	No additional impacts are predicted and therefore the assessment of significant effects presented in **Chapter 9: Geology and Soils** of the ES **[APP-030]** is considered valid.
Material Resources						
Consumption of material resources	It is understood that Allerdene three span viaduct option would need more steel (800	Construction	No additional mitigation is anticipated to be required over and above	There would be no change to the effects reported in **Chapter 10:**	Out	Based on the design information provided, no change is anticipated in the effects from the Allerdene three span viaduct option in comparison with the options previously assessed in

Aspect of Assessment	Potential Impacts	Construction / Operation	Potential Mitigation	Likely Significant Effects	Scoped In / Out	Justifications for Topics Scoped In / Out
	tonnes) compared to Allerdene embankment option but would require less earthworks materials (115,000 tonnes) when compared to Allerdene embankment option. Overall materials quantities for Allerdene three span option would be similar to Allerdene embankment and Allerdene viaduct option. At this time, no information is available on recycled content. It has been confirmed by the main contractor that a similar order of magnitude of material types to those assessed in **Chapter 10: Material Resources** of the ES **[APP-031]** (e.g. concrete, steel, asphalt etc) would be used in construction and would be sourced from the United Kingdom (UK), or lower geographical scale. At the time of publication, no quantitative information beyond that which has already been provided, was available for the assessment.		that which was identified in **Chapter 10: Material Resources** of the ES **[APP-031]**.	**Material Resources** of the ES **[APP-031]** as a result of thee Allerdene three span viaduct option. This is because the sensitivity of material resources based on the regional availability is not considered to change and would remain as previously assessed (medium). It is anticipated that the type and source of materials required for the Allerdene three span viaduct option would be comparable to Allerdene embankment option and Allerdene viaduct option and materials would in all cases be sourced nationally or at lower geographic scale, retaining a minor magnitude of impact. The effects as reported in **Table 10-19** in **Chapter 10: Material Resources** of the ES **[APP-031]** would remain as **slight adverse** (not significant).		the ES **Chapter 10: Material Resources** of the ES **[APP-031]**. This is because the type and source of materials required for the Allerdene three span viaduct option is expected to be comparable to Allerdene embankment option and Allerdene viaduct option. The effects from the consumption of material resources during construction of **Chapter 10: Materials Resources** of the ES **[APP-031]** would therefore remain not significant.
Generation and disposal of waste to landfill	It is anticipated that the volume and type of waste arising as a result of the construction of Allerdene three span viaduct option would be comparable to that reported in **Chapter 10: Material Resources** of the ES **[APP-031]**.	Construction	No additional mitigation is anticipated to be required over and above that which was identified in **Chapter 10: Material Resources** of the ES **[APP-031]**.	Compared to that which was reported in **Chapter 10: Material Resources** of the ES **[APP-031]**, there would be no change to the effects from waste disposal as a result of thee	Out	Based on the design information provided, the volume of waste for disposal from the three span bridge is comparable to the Allerdene embankment option and Allerdene viaduct option. As such, no change in the magnitude of impact are expected, and the findings of the Material Resources chapter of **Chapter 10: Material Resources** of the ES **[APP-031]** will not alter. Therefore, no further assessment is required.

Aspect of Assessment	Potential Impacts	Construction / Operation	Potential Mitigation	Likely Significant Effects	Scoped In / Out	Justifications for Topics Scoped In / Out
	It is noted that demolition arisings from the Allerdene Bridge would be generated too late in the programme to be re-used on other areas of the Scheme, however there may be possibilities to use these arisings on other schemes. This will be assessed further as the project progresses.			Allerdene three span viaduct option. This is because the earthworks and foundation works for the single and three-span viaduct options would – in the context of all arisings to be produced across the Scheme – generate similar (though it is acknowledged, not identical) volumes of arisings to landfill. The forecast waste to landfill from the embankment option is also a similar order of magnitude. The residual effects on landfill capacity during construction, as reported in **Table 10-19** from **Chapter 10: Material Resources** of the ES **[APP-031]**, would therefore remain neutral for inert waste (not significant) and slight for non-inert waste (not significant).		
Consumption of Material Resources	Operational impacts are anticipated to be comparable to Allerdene viaduct option and Allerdene embankment option i.e. minor works to maintain the Scheme assets would be required. The extent of change is expected to be minimal, and the potential to consume material resources therefore extremely limited.	Operation	No additional mitigation is anticipated to be required over and above that which was identified in **Chapter 10: Material Resources** of the ES **[APP-031]**.	Compared to that which was reported in **Chapter 10: Material Resources of the ES [APP-031]**, there would be no change to the effects from the consumption of materials as a result of the Allerdene three span viaduct option. This is because the operational and maintenance	Out	The design of the Allerdene three span viaduct option would have negligible operational differences to Allerdene embankment option and Allerdene viaduct option assessed previously in **Chapter 10: Material Resources** of the ES **[APP-031]**. As such, no further assessment is required.

Aspect of Assessment	Potential Impacts	Construction / Operation	Potential Mitigation	Likely Significant Effects	Scoped In / Out	Justifications for Topics Scoped In / Out
				requirements would be similar to the embankment and single span viaduct option. The residual effects from consumption of materials resources during operation, as reported in **Table 10-20** in **Chapter 10: Material Resources** of the ES **[APP-031]** would therefore remain **slight adverse** (not significant).		
Generation and disposal of waste to landfill	Operational impacts are anticipated to be comparable to Allerdene viaduct and Allerdene embankment options i.e. minor works to maintain the Scheme assets would be required. The extent of these changes is expected to be minimal, and the potential to produce and dispose of waste to landfill, therefore extremely limited.	Operation	No additional mitigation is anticipated to be required over and above that which was identified in **Chapter 10: Material Resources** of the ES **[APP-031]** .	There would be no change to the effects on the generation and disposal of waste to landfill reported in **Chapter 10: Material Resources** of the ES **[APP-031]** as a result of the Allerdene three span viaduct option. This is because the operational and maintenance requirements would be similar to the embankment and single span viaduct option. The effects on waste during operation, as reported in **Table 10-20** in **Chapter 10: Material Resources** of the ES **[APP-031]**, would therefore remain **neutral** for inert waste (not significant) and **slight adverse** for non-inert waste (not significant).	Out	The design of the Allerdene three span viaduct option would have negligible operational differences to the options assessed previously. As such, no further assessment is required.

Aspect of Assessment	Potential Impacts	Construction / Operation	Potential Mitigation	Likely Significant Effects	Scoped In / Out	Justifications for Topics Scoped In / Out
Noise and Vibration						
Noise from construction	It is understood that changes to the construction methods for the Allerdene three span viaduct option would be minor and the associated noise impacts are therefore anticipated to be no worse than those identified in **Chapter 11: Noise and Vibration** of the ES **[APP-032]** As detailed in the ES significant effects are only predicted during night time working. The Allerdene three span viaduct option is expected to reduce the duration of the earthwork's construction phase with the overall construction programme being reduced from 36 months to 30 months. The duration of the Allerdene three span viaduct option construction phase would be slightly longer than the Allerdene embankment option but would be approximately six weeks shorter that Allerdene viaduct option. As such the noise impacts would be within the range predicted in **Chapter 11: Noise and Vibration** of the ES **[APP-032]**.	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]**.	There would be no change to the effects identified in **Chapter 11: Noise and Vibration** of the ES **[APP-032]** as a result of the Allerdene three span viaduct option. This is because the noise from construction reported in **paragraph 11.10.12** for daytime and **paragraph 11.10.22** for nightime in **Chapter 11: Noise and Vibration** of the ES **[APP-032]** would remain as **not significant** for daytime noise and **significant adverse** during night-time working on the bridge.	Out	Impacts are expected to remain within the range of those predicted for the two options assessed in **Chapter 11: Noise and Vibration** of the ES **[APP-032]**.
Vibration from construction	On the basis that no changes to the type and amount of piling is proposed no potential vibration impacts are identified to result from piling. A shortened duration compared to the Allerdene viaduct option and the Allerdene embankment option as assessed in **Chapter 11: Noise and Vibration** of the	Construction	No additional mitigation is anticipated to be required over and above that which was identified in **Chapter 11: Noise and Vibration** of the ES **[APP-032]**.	There is no change in the likely effects as reported in **Chapter 11: Noise and Vibration** of the ES **[APP-032]** as a result of the Allerdene three span viaduct option. This is because the vibration from construction reported in	Out	Impacts are expected to remain within the range of those predicted for Allerdene embankment option and Allerdene viaduct option assessed in **Chapter 11: Noise and Vibration** of the ES **[APP-032]**.

Aspect of Assessment	Potential Impacts	Construction / Operation	Potential Mitigation	Likely Significant Effects	Scoped In / Out	Justifications for Topics Scoped In / Out
	ES **[APP-032]** for earthworks construction is likely to result in a lessening of impact magnitude for the Allerdene three span viaduct option.			ES **paragraph 11.10.36 and 11.10.39** in **Chapter 11: Noise and Vibration** of the ES **[APP-032]** would remain not significant.		
Operational noise	No changes to operations; road traffic noise due to no change in traffic flows or speeds anticipated with design change.	Operation	No additional mitigation is anticipated to be required over and above that which was identified in **Chapter 11: Noise and Vibration** of the ES **[APP-032]**.	There would be no change in the significant effects as reported in **Chapter 11: Noise and Vibration** of the ES **[APP-032]** as a result of the Allerdene three span viaduct option. This is because operational noise reported in **Table 11-28** in **Chapter 11: Noise and Vibration** of the ES **[APP-032]** would remain the same (mostly not significant with some significant beneficial) due to no change in traffic flows or speeds are anticipated with the design change.	Out	Once operational there would be no difference between the options with regards to the effects associated with noise.
Population and Human Health						
Motorised Travellers (Views from the Road)	Impacts would remain consistent with the Allerdene embankment option and Allerdene viaduct option.	Construction / Operation	No additional mitigation is anticipated to be required over and above that identified in **Chapter 12: Population and Human Health** of the ES **[APP-033]**.	There would be no change in the significant effects as reported in **Chapter 12: Population and Human Health** of the ES **[APP-033]** as a result of the Allerdene three span viaduct option. This is because the effects on motorised travellers (views from the road) during construction/operation reported in the ES paragraph 12.10.7	Out	No additional impacts predicted, and the impact assessment presented in **Chapter 12: Population and Human Health** of the ES **[APP-033]** is considered valid.

Aspect of Assessment	Potential Impacts	Construction / Operation	Potential Mitigation	Likely Significant Effects	Scoped In / Out	Justifications for Topics Scoped In / Out
				would remain as **slight adverse** (not significant) for construction and operation.		
Motorised Travellers (Driver Stress)	Impacts would remain consistent with the Allerdene embankment option and Allerdene viaduct option.	Construction	No additional mitigation is anticipated to be required over and above that identified in **Chapter 12: Population and Human Health** of the ES **[APP-033]**.	There would be no change in the significant effects as reported in **Chapter 12: Population and Human Health** of the ES **[APP-033]** as a result of the Allerdene three span viaduct option. This is because the effects on motorised travellers (driver stress) during construction reported in **paragraph 12.10.13** n **Chapter 12: Population and Human Health** of the ES **[APP-033]** would remain as **major adverse** (significant) for construction.	Out	No additional impacts predicted, and the impact assessment presented in **Chapter 12: Population and Human Health** of the ES **[APP-033]** is considered valid.
Motorised Travellers (Driver Stress)	Impacts would remain consistent with Allerdene embankment option and Allerdene viaduct option.	Operation	No additional mitigation is anticipated to be required over and above that identified in **Chapter 12: Population and Human Health** of the ES **[APP-033]**.	There would be no change in the significant effects as reported in **Chapter 12: Population and Human Health** of the ES **[APP-033]** as a result of the Allerdene three span viaduct option. This is because the effects on motorised travellers (driver stress) during operation as reported in **paragraph 12.10.16** in **Chapter 12: Population and Human Health** of the ES **[APP-033]** would remain as **minor beneficial** (not significant) for operation.	Out	No additional impacts predicted, and the impact assessment presented in **Chapter 12: Population and Human Health** of the ES **[APP-033]** is considered valid.

Aspect of Assessment	Potential Impacts	Construction / Operation	Potential Mitigation	Likely Significant Effects	Scoped In / Out	Justifications for Topics Scoped In / Out
Rail Travellers	Impacts would remain consistent with the Allerdene embankment option and Allerdene viaduct option.	Construction	The works would be programmed in consultation with Network Rail and rail operators to ensure effects on rail travellers are minimised and alternative transport methods provided where necessary. The current construction programme, which was not available when undertaking the assessment of impacts on Rail Travelers in **Chapter 12: Population and Human Health** of the ES **[APP-033]**, indicates that all demolition and construction activity would take place at times when no trains are scheduled.	There would be no change in the significant effects as reported in **Chapter 12: Population and Human Health** of the ES **[APP-033]** as a result of the Allerdene three span viaduct option. This is because the effects on rail travellers during construction would remain as **slight adverse** (not significant) during construction.	Out	No additional impacts predicted, and the impact assessment presented in **Chapter 12: Population and Human Health** of the ES **[APP-033]** is considered valid. It has been stated that there would be no major changes to construction working hours.
Walking, Cycling and Horse-Riding	Impacts would remain consistent with the Allerdene embankment option and Allerdene viaduct option.	Construction	No additional mitigation is anticipated to be required over and above that identified in **Chapter 12: Population and Human Health** of the ES **[APP-033]**.	There would be no change in the significant effects as reported in **Chapter 12: Population and Human Health** of the ES **[APP-033]** as a result of the Allerdene three span viaduct option. This is because the effects on walking, cycling and horse-riding during construction reported in **paragraph 12.10.25** in **Chapter 12: Population and Human Health** of the ES **[APP-033]** would remain as **moderate adverse**	Out	No additional impacts predicted, and the impact assessment presented in **Chapter 12: Population and Human Health** of the ES **[APP-033]** is considered valid.

Aspect of Assessment	Potential Impacts	Construction / Operation	Potential Mitigation	Likely Significant Effects	Scoped In / Out	Justifications for Topics Scoped In / Out
				(significant) for construction.		
Walking, Cycling and Horse-Riding	Impacts would remain consistent with the Allerdene embankment option and Allerdene viaduct option.	Operation	No additional mitigation is anticipated to be required over and above that identified in **Chapter 12: Population and Human Health** of the ES **[APP-033]**.	There would be no change in the significant effects as reported in **Chapter 12: Population and Human Health** of the ES **[APP-033]** as a result of the Allerdene three span viaduct option. This is because the effects on walking, cycling and horse-riding during operation reported in **paragraph 12.10.28** in **Chapter 12: Population and Human Health** of the ES **[APP-033]** would remain as **moderate beneficial** (significant) for operation.	Out	No additional impacts predicted, and the impact assessment presented in **Chapter 12: Population and Human Health** of the ES **[APP-033]** is considered valid.
Community Severance	Impacts would remain consistent with the Allerdene embankment option and Allerdene viaduct option.	Construction	No additional mitigation is anticipated to be required over and above that identified in **Chapter 12: Population and Human Health** of the ES **[APP-033]**.	There would be no change in the significant effects as reported in **Chapter 12: Population and Human Health** of the ES **[APP-033]** as a result of the Allerdene three span viaduct option. This is because the effects on community severance during construction reported in t **paragraph 12.10.31** in **Chapter 12: Population and Human Health** of the ES **[APP-033]** would remain as **moderate adverse** (significant) for construction.	Out	No additional impacts predicted, and the impact assessment presented in **Chapter 12: Population and Human Health** of the ES **[APP-033]** is considered valid.

Aspect of Assessment	Potential Impacts	Construction / Operation	Potential Mitigation	Likely Significant Effects	Scoped In / Out	Justifications for Topics Scoped In / Out
Private and Community Land Take	Impacts would remain consistent with the Allerdene embankment option and Allerdene viaduct Option.	Construction	No additional mitigation is anticipated to be required over and above that identified in **Chapter 12: Population and Human Health** of the ES **[APP-033]**.	There would be no change in the significant effects as reported in **Chapter 12: Population and Human Health** of the ES **[APP-033]** as a result of the Allerdene three span viaduct option. This is because the effects on private and community land take during construction reported in **paragraph 12.10.35** in **Chapter 12: Population and Human Health** of the ES **[APP-033]** would remain as **slight adverse** (not significant) for construction.	Out	No additional impacts predicted, and the impact assessment presented in **Chapter 12: Population and Human Health** of the ES **[APP-033]** is considered valid.
Private and Community Land Take	Impacts would remain consistent with the Allerdene embankment option and Allerdene viaduct option.	Operation	No additional mitigation is anticipated to be required over and above that identified in **Chapter 12: Population and Human Health** of the ES **[APP-033]**.	There would be no change in the significant effects as reported in **Chapter 12: Population and Human Health** of the ES **[APP-033]** as a result of the Allerdene three span viaduct option. This is because the effects on private and community land take during operation reported in **paragraph 12.10.25** in **Chapter 12: Population and Human Health** of the ES **[APP-033]** would remain as **slight adverse** (not significant) for operation.	Out	No additional impacts predicted, and the impact assessment presented in **Chapter 12: Population and Human Health** of the ES **[APP-033]** is considered valid.
Economy	Impacts would remain consistent with the Allerdene embankment option and Allerdene viaduct option.	Construction	No additional mitigation is anticipated to be required over and above that identified in **Chapter**	There would be no change in the significant effects as reported in **Chapter 12: Population**	Out	No additional impacts predicted, and the impact assessment presented in **Chapter 12: Population and Human Health** of the ES **[APP-033]** is considered valid.

Aspect of Assessment	Potential Impacts	Construction / Operation	Potential Mitigation	Likely Significant Effects	Scoped In / Out	Justifications for Topics Scoped In / Out
			12: Population and Human Health of the ES **[APP-033]**.	**and Human Health** of the ES **[APP-033]** as a result of the Allerdene three span viaduct option. This is because the effects on the Economy during construction reported in **paragraph 12.10.42** in **Chapter 12: Population and Human Health** of the ES **[APP-033]** would remain as **slight beneficial** (not significant) for construction.		
Economy	Impacts would remain consistent with the Allerdene embankment option and Allerdene viaduct option.	Operation	No additional mitigation is anticipated to be required over and above that identified in **Chapter 12: Population and Human Health** of the ES **[APP-033]**.	There would be no change in the significant effects as reported in **Chapter 12: Population and Human Health** of the ES **[APP-033]** as a result of the Allerdene three span viaduct option. This is because the effects on the Economy during operation reported in **paragraph 12.10.43** in **Chapter 12: Population and Human Health** of the ES **[APP-033]** would remain as **slight beneficial** (not significant) for operation.	Out	No additional impacts predicted, and the impact assessment presented in **Chapter 12: Population and Human Health** of the ES **[APP-033]** is considered valid.
Human health	Impacts would remain consistent with the Allerdene embankment option and Allerdene viaduct option.	Construction	Topsoil bunds to be established around the perimeter of the stockpile area to screen the properties on Lamesley Road and grass seeded to prevent dust.	There would be no change in the significant effects as reported in **Chapter 12: Population and Human Health** of the ES **[APP-033]** as a result of the Allerdene three span viaduct	Out	Not anticipated to alter the previous assessment findings which would remain **moderate adverse** (significant) on human health.

Aspect of Assessment	Potential Impacts	Construction / Operation	Potential Mitigation	Likely Significant Effects	Scoped In / Out	Justifications for Topics Scoped In / Out
			No further additional mitigation is anticipated to be required over and above that identified in **Chapter 12: Population and Human Health** of the ES **[APP-033]**.	option. This is because human health during construction / operation reported in **paragraph 12.10.51** in **Chapter 12: Population and Human Health** of the ES **[APP-033]** would remain **moderate adverse** (significant).		
Human health	Impacts would remain consistent with the Allerdene embankment option and Allerdene viaduct option.	Operation	Topsoil bunds to be established around the perimeter of the stockpile area to screen the properties on Lamesley Road and grass seeded to prevent dust. No further additional mitigation is anticipated to be required over and above that identified in **Chapter 12: Population and Human Health** of the ES **[APP-033]**.	There would be no change in the significant effects as reported in **Chapter 12: Population and Human Health** of the ES **[APP-033]** as a result of the Allerdene three span viaduct option. This is because human health during operation reported in **paragraph 12.10.52** in **Chapter 12: Population and Human Health** of the ES **[APP-033]** would remain **slight beneficial** (not significant) for operation on human health.	Out	Not anticipated to alter the previous assessment findings which would remain **moderate adverse** (significant) on human health.
Road Drainage and the Water Environment						
Road Drainage and the Water Environment	The potential impacts would be the same as those identified in Chapter **13: Road Drainage and the Water Environment** of the ES **[APP-034]** for Allerdene viaduct option as the	Construction	No additional mitigation is anticipated to be required over and above that identified in **Chapter 13: Road Drainage and the Water Environment** of the ES **[APP-034]**.	It is anticipated that the likely significant effects would be the same as those for Allerdene viaduct option the key aspects of which would remain as follows:	Out	There are no changes to the water environment that are over and above those assessed within **Chapter 13: Road Drainage and the Water Environment** of the ES **[APP-034]** as the effects would be the same the Allerdene viaduct option as the arrangements would be the same.

Aspect of Assessment	Potential Impacts	Construction / Operation	Potential Mitigation	Likely Significant Effects	Scoped In / Out	Justifications for Topics Scoped In / Out
	arrangements for the Allerdene Burn would be the same.			- Decrease in water quality – River Team: **slight adverse** (not significant) - Decrease in water quality – Allerdene Burn: **slight adverse** (not significant) - Increased fluvial flood risk – fluvial floodplain – River Team: **slight adverse** (not significant) - Increased fluvial flood risk – human safety – River Team: **neutral** (not significant) - Increased fluvial flood risk - fluvial flood plain – Allerdene Burn: **neutral** (not significant) - Increased fluvial flood risk – human safety – Allerdene Burn: **neutral** (not significant).		
Road Drainage and the Water Environment	The potential impacts would be the same as those identified in **Chapter 13: Road Drainage and the Water Environment** of the ES **[APP-034]** for Allerdene viaduct option as the arrangements for the Allerdene Burn would be the same.	Operation	No additional mitigation is anticipated to be required over and above that identified in **Chapter 13: Road Drainage and the Water Environment** of the ES **[APP-034]**.	It is anticipated that the likely significant effects would be the same as those for Allerdene viaduct option the key aspects of which would remain as follows: - Decrease in water quality –	Out	There are no changes to the water environment that are over and above those assessed within **Chapter 13: Road Drainage and the Water Environment** of the ES **[APP-034]** as the effects would be the same the Allerdene viaduct option as the arrangements would be the same.

Aspect of Assessment	Potential Impacts	Construction / Operation	Potential Mitigation	Likely Significant Effects	Scoped In / Out	Justifications for Topics Scoped In / Out
				River Team: **slight beneficial** (not significant) - Decrease in water quality – Allerdene Burn: **beneficial adverse** (not significant) - Decreased fluvial flood risk and changes to WFD status – fluvial floodplain – River Team: **slight adverse** (not significant) - Decreased fluvial flood risk – human safety – River Team: **neutral** (not significant) - Increased fluvial flood risk - fluvial flood plain – Allerdene Burn: **neutral** (not significant) - Increased fluvial flood risk – human safety – Allerdene Burn: **neutral** (not significant).		
Climate						
Effect of the Scheme on climate (Carbon / GHG)						
Consumption of materials, generation of waste and	Increased Greenhouse Gas (GHG) emissions associated with additional required materials, generation of waste and their transportation.	Construction	No additional mitigation is anticipated to be required over and above which was identified in	There would be no change to the significant effects reported in **Chapter 14: Climate** of the ES **[APP-035]** as a	Out	It is possible that there would be an increase in GHG emissions associated with the Allerdene three span viaduct option due to the types of materials required (i.e. steel being more carbon intensive than imported earthworks).

Aspect of Assessment	Potential Impacts	Construction / Operation	Potential Mitigation	Likely Significant Effects	Scoped In / Out	Justifications for Topics Scoped In / Out
their transportation	It is understood that similar material types (e.g. concrete, steel, asphalt etc) are anticipated to be required for Allerdene three span viaduct option and that no changes are anticipated in relation to the volume or type of waste generated. Materials quantities and wastes generated for the Allerdene three span viaduct option would be within the range assessed in **Chapter 14: Climate** of the ES **[APP-035]** for Allerdene embankment option and Allerdene three span viaduct option. Allerdene three span viaduct option would require more steel than the Allerdene embankment but less steel than Allerdene viaduct option. Allerdene three span viaduct option would require less imported earthworks material than Allerdene embankment option but more than that required for Allerdene viaduct option. There would be no changes to the location of materials sourced or disposal of wastes and the associated impacts would therefore be the same as those assessed in **Chapter 14: Climate** of the ES **[APP-035]**.		**Chapter 14: Climate** of the ES **[APP-035]**.	result of the Allerdene three span viaduct option. This is because based on the quantities and types of materials and waste being within the range assessed in **Chapter 14: Climate** of the ES **[APP-035]** and that the location of materials sourced, and disposal of wastes would not change, there is the potential for GHG emissions to increase. The effects on climate (Consumption of materials, generation of waste and their transportation) as reported in ES paragraph 14.10.17 and 14.10.20 would remain as **slight adverse** effect (not significant).		However, quantities and types of materials required, and waste generated are likely to be within the range of values already assessed in **Chapter 14: Climate** of the ES **[APP-035]** and would, on balance be comparable to the effects identified for the Allerdene viaduct option and Allerdene embankment option in the ES. The GHG assessment in the ES puts the emissions associated with the scheme into the context of the UKs national carbon budgets (see Table 14-15 in **Chapter 14: Climate** of the ES **[APP-035]**. This is in-line with Paragraph 5.17 if the NPS NN (2014). Given the scale of the contribution of the scheme to these budgets, the ES concluded that the scheme with the Allerdene viaduct option or the Allerdene embankment option would have a slight adverse effect (not significant) on climate. Using the design information and professional judgement from schemes of a similar size and nature, the Allerdene three span viaduct option is not likely to alter the current outcome of the assessment of **Chapter 14: Climate** of the ES **[APP-035]**. The likely GHG emissions associated with the three span viaduct option are likely to be within the range of values already assessed in **Chapter 14: Climate** of the ES **[APP-035]** and would, on balance be comparable to the effects identified, hence it is scoped out.
Operational (end-user traffic and maintenance, repair and refurbishment)	Operational impacts of Allerdene three span viaduct option would be comparable to Allerdene embankment option and Allerdene viaduct option.	Operation	No additional mitigation is anticipated to be required over and above which was identified in **Chapter 14: Climate** of the ES **[APP-035]**.	There would be no change to the significant effects reported in **Chapter 14: Climate** of the ES **[APP-035]** as a result of the Allerdene	Out	The operation of Allerdene three span viaduct option would be comparable to the options assessed in **Chapter 14: Climate** of the ES **[APP-035]** and further assessment has therefore been scoped out.

Aspect of Assessment	Potential Impacts	Construction / Operation	Potential Mitigation	Likely Significant Effects	Scoped In / Out	Justifications for Topics Scoped In / Out
				three span viaduct option. This is because the operational (end-user traffic and maintenance, repair and refurbishment) during operation reported in **paragraph 14.10.17** and **paragraph 14.10.20** in **Chapter 14: Climate** of the ES **[APP-035]** would therefore remain as **slight adverse** (not significant).		
Vulnerability of the Scheme to Climate Change						
Vulnerability to climate change associated with climate and weather	Potential impacts associated with weather and climate on construction of the Allerdene three span viaduct would be comparable to Allerdene embankment option and Allerdene viaduct option. This is based on the assumption that the method of construction of the Allerdene three span viaduct option is broadly similar to the Allerdene viaduct option previously assessed and because the Allerdene three span viaduct option will be exposed to the same weather and climate conditions as the options previously assessed. The potential impacts associated with weather and climate during construction of the Allerdene three span viaduct option are therefore the same as those described in **Chapter 14: Climate** of the ES **[APP-035]**.	Construction	No additional mitigation is anticipated to be required over and above which was identified in **Chapter 14: Climate** of the ES **[APP-035]**.	There would be no change to the significant effects reported in **Chapter 14: Climate** of the ES **[APP-035]** as a result of the Allerdene three span viaduct option. This is because the vulnerability to climate change associated with climate and weather during construction reported in ES Table 14-17 would remain as **not significant**.	Out	Whilst the construction methodology for the Allerdene three span viaduct option has not been developed to the same level of detail as the single span and 6/7 span options, it is understood that the construction sequence and method would be broadly similar. In addition to this, the Allerdene three span viaduct option will be exposed to the same weather and climate variables as the previously assessed options. As such, the potential impacts and effects of weather and climate on construction of the Allerdene three span viaduct option are not considered to differ from those already assessed in **Chapter 14: Climate** of the ES **[APP-035]**. As such, no further assessment is required.

Aspect of Assessment	Potential Impacts	Construction / Operation	Potential Mitigation	Likely Significant Effects	Scoped In / Out	Justifications for Topics Scoped In / Out
Vulnerability to climate change associated with climate and weather	The Allerdene three span viaduct option will be exposed to the same climate variables as described in **Chapter 14: Climate** of the ES **[APP-035]**. The main potential impact from climate change on the Allerdene three span viaduct during construction is de-stabilisation of the slope due to loss of vegetative cover as a result of changes in temperature and rainfall. This impact is assessed in **Chapter 14: Climate** of the ES **[APP-035]**. There are not considered to be any further potential impacts due to climate change during operation to those already assessed.	Operation	Mitigation for the potential impact of climate change on embankment vegetation of the Allerdene three span viaduct option would be the same as that described in **Chapter 14: Climate** of the ES **[APP-035]**, i.e. • A 20% climate change allowance in drainage design • Foundations piled into bedrock • Ground improvement works in the form of rigid inclusions • Regular maintenance of vegetation cover and landscaping • Inspections of structures at 2 and 6 year intervals No additional mitigation is anticipated to be required over and above which was identified in **Chapter 14: Climate** of the ES **[APP-035]**.	Whilst the Allerdene three span viaduct option may be vulnerable to de-stabilisation as a result of climate change, it is considered that the mitigation measures assessed in **Chapter 14: Climate** of the ES **[APP-035]** address this and the conculsion of the assessment would remain as not significant. As such, there would be no change to the significant effects reported in **Chapter 14: Climate** of the ES **[APP-035]** as a result of the Allerdene three span viaduct option. This is because the vulnerability to climate change associated with climate and weather during operation reported in **Table 14-17** in **Chapter 14: Climate** of the ES **[APP-035]** would remain as **not significant**.	Out	The potential impact of climate change on vegetation cover is assessed in **Chapter 14: Climate** of the ES **[APP-035]**. Mitigation for this impact is also considered in the assessment and would be the same for the impact of climate change on embankment vegetation for the Allerdene three span viaduct option. As such, no further assessment is required. The design of the Allerdene three span viaduct would have no operational differences to the options assessed previously. As such, no further assessment is required.
Combined and Cumulative Assessment						
Assessment of Combined Effects	The potential impacts would be the same as those identified in **Chapter 15: Combined and Cumulative Assessment** of the ES **[APP-036]**. Therefore, there will be no additional construction impacts anticipated as a result of Allerdene three span viaduct option.	Construction	No additional mitigation is anticipated to be required over and above that identified in **Chapter 15: Combined and Cumulative** of the ES **[APP-036]**.	There would be no change to the significant effects reported in **Chapter 15: Combined and Cumulative Assessment** of the ES **[APP-036]** as a result of the Allerdene three span viaduct option. This is because the	Out	No change in common receptors were identified in this Assessment of Combined Effects during construction. It is not anticipated that there would be an overall change in impacts or mitigation from that previously reported in **Chapter 15: Combined and Cumulative Assessment** of the ES **[APP-036]** and there would not be any significant combined effects as a result of Allerdene three span viaduct option.

Aspect of Assessment	Potential Impacts	Construction / Operation	Potential Mitigation	Likely Significant Effects	Scoped In / Out	Justifications for Topics Scoped In / Out
				assessment of combined effects during construction would be comparable to the effect identified for the ES as reported in ES Table 15-7 and would remain as **minor adverse** (not significant).		
Assessment of Combined Effects	The potential impacts would be the same as those identified in **Chapter 15: Combined and Cumulative Assessment** of the ES **[APP-036]**. Therefore, there will be no additional impacts anticipated as a result of Allerdene three span viaduct option.	Operation	No additional mitigation is anticipated to be required over and above that identified in **Chapter 15: Combined and Cumulative** of the ES **[APP-036]**.	There would be no change to the significant effects reported in **Chapter 15: Combined and Cumulative Assessment** of the ES **[APP-036]** as a result of the Allerdene three span viaduct option. This is because the assessment of combined effects during operation would be comparable to the effects identified for the ES as reported in **Table 15-**7 of **Chapter 15: Combined and Cumulative Assessment** of the ES **[APP-036]** and would remain as **minor beneficial** and **minor adverse** (not significant).	Out	No change in common receptors were identified in this Assessment of Combined Effects during operation. It is not anticipated that there would be an overall change in impacts or mitigation from that previously reported in **Chapter 15: Combined and Cumulative Assessment** of the ES **[APP-036]** and there would not be any significant combined effects as a result of Allerdene three span viaduct option.
Assessment of Cumulative Effects	For the Assessment of Cumulative Effects, a full review of planning applications was undertaken in February 2020 for the Allerdene three span viaduct option ES Addendum. Based on the assessment methodology detailed in **Chapter 15:**	Construction	No additional mitigation is anticipated to be required over and above that identified in **Chapter 15: Combined and Cumulative** of the ES **[APP-036]**.	During construction, for both Planning Applications: ID 14 and ID 15, there is the potential for cumulative effects related to the demand for materials for construction and waste disposal (i.e. waste	Out	It is not anticipated that there would be a change in impacts or mitigation from that previously reported in **Chapter 15: Combined and Cumulative Assessment** of the ES **[APP-036]** and there would not be any significant effects as a result of Allerdene three span viaduct option.

Aspect of Assessment	Potential Impacts	Construction / Operation	Potential Mitigation	Likely Significant Effects	Scoped In / Out	Justifications for Topics Scoped In / Out
	Cumulative and Combined Assessment of the ES [**APP-036**], and using the same study areas are defined previously, one additional development is to be considered, as follows: - (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. **Figure 1**, of **Appendix A.1** of this assessment details this Planning Application. The potential impacts would be the same for Allerdene embankment option, Allerdene viaduct option and Allerdene three span option for the above Planning Application. The impacts for this Planning Application identified in the ES would be the same as those in **Chapter 15: Combined and Cumulative Assessment** of the ES **[APP-036]** for Allerdene embankment option and Allerdene viaduct option.			exceeding local land fill capacity) associated with the Scheme. The potential cumulative effects during construction are considered to be **minor adverse** significance (i.e. not significant). There would be no change to the significant effects reported in **Chapter 15: Combined and Cumulative Assessment** of the ES **[APP-036]** as a result of the Allerdene three span viaduct option.		
Assessment of Cumulative Effects	For the Assessment of Cumulative Effects, a full review of planning applications was undertaken in February 2020 for the Allerdene three span viaduct option ES Addendum, as detailed above. The potential impacts would be the same as those identified in **Chapter 15: Combined and Cumulative Assessment** of	Operation	No additional mitigation is anticipated to be required over and above that identified in **Chapter 15: Combined and Cumulative** of the ES **[APP-036]**.	There are no significant cumulative effects from Planning Applications ID 14 and ID 15 (as detailed above) associated with the Scheme during operation. There would be no change to the significant effects reported in **Chapter 15:**	Out	It is not anticipated that there would be a change in impacts or mitigation from that previously reported in **Chapter 15: Combined and Cumulative Assessment** of the ES **[APP-036]** and there would not be any significant effects as a result of Allerdene three span viaduct option.

Aspect of Assessment	Potential Impacts	Construction / Operation	Potential Mitigation	Likely Significant Effects	Scoped In / Out	Justifications for Topics Scoped In / Out
	the ES **[APP-036]**. Therefore, there will be no additional operational impacts anticipated as a result of Allerdene three span viaduct option.			**Combined and Cumulative Assessment** of the ES **[APP-036]** as a result of the Allerdene three span viaduct option and would remain as **negligible** and **minor beneficial** (not significant).		

5. SUMMARY

Table 5-1 - Summary

Environmental Topic and Element	Scoped In / Out (Construction/ Operation)	Justification for Topics Scoped In / Out
Air Quality	Out	No significant change from **Chapter 5: Air Quality** of the ES **[APP-026]** conclusions.
Cultural Heritage	Out	There would be no change to the significant effects reported in **Chapter 6: Cultural Heritage** of the ES **[APP-027]** as a result of the Allerdene three span viaduct option.
Landscape and Visual	In	The construction of the Allerdene three span viaduct option has the potential to give rise to an effect (significant) comparable to the Allerdene embankment option but may be different due to a shorter construction period and a limitation on the capacity of the slope to be planted. The construction and presence of the Allerdene three span viaduct option has the potential to give rise to significant effects on visual amenity and a detailed assessment would be appropriate.
Biodiversity	In	Habitat loss and creation calculations require updating to understand the impacts of the Scheme and if it meets obligations for habitat compensation. The biodiversity net gain assessment would also be affected by the change in habitat compensation allocation. Two number of aspects have been scoped out as no additional impacts predicted, primarily for impacts on Statutory and non-statutory sites and protected and notable species.
Geology and Soils	Out	No anticipated change in effect from those stated in **Chapter 9: Geology and Soils** of the ES **[APP-030]** as the scope of earthworks being proposed is similar to or

Environmental Topic and Element	Scoped In / Out (Construction/ Operation)	Justification for Topics Scoped In / Out
		reduced from the previous scope, therefore no additional mitigation required.
Material Resources	Out	No change is anticipated in the significant effects presented in **Chapter 10: Material Resources** of the ES **[APP-031]** as the type and source of materials required for the Allerdene three span viaduct option would be comparable to Allerdene embankment option and Allerdene viaduct option.
Noise and Vibration	Out	Impacts are expected to remain within the range of those predicted for the two options assessed in **Chapter 11: Noise and Vibration** of the ES **[APP-032]**.
Population and health	Out	No additional impacts predicted, and the impact assessment presented in **Chapter 12: Population and Human Health** of the ES **[APP-033]** is considered valid.
Road Drainage and the Water Environment	Out	There would be no changes to the water environment that are over and above those assessed within **Chapter 13: Road Drainage and the Water Environment** of the ES **[APP-034]**.
Climate: Effect of the Scheme on climate (Carbon / GHG)	Out	Quantities and types of materials required, and waste generated would all be within the range of values already assessed in **Chapter 14: Climate** of the ES **[APP-035]** and would, on balance be comparable to the effects identified. The Allerdene three span viaduct option is not likely to alter the current outcome of the assessment of **Chapter 14: Climate** of the ES **[APP-035]**.
Climate: Vulnerability of the Scheme to climate change	Out	It is assumed that the design of the Allerdene three span viaduct option will adhere to the same robust design standards as the other design options in

Environmental Topic and Element	Scoped In / Out (Construction/ Operation)	Justification for Topics Scoped In / Out
		Chapter 14: Climate of the ES **[APP-035]**. As such, no further assessment is required.
Combined 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.
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.

6. NEXT STEPS

6.1.1. It is proposed that:

a. The Applicant submits its sensitivity appraisal and detailed assessment of the inclusion of Allerdene three-span viaduct at Deadline 4 – (20 April 2020).

6.1.2. Full assessments will be completed for the environmental disciplines scoped in to the assessment as described within this report.

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

6.1.4. A full Environmental Assessment for proposed changes to the Scheme (allowing a comparison of any differences between the proposed changes and the Scheme as at the Application) will be produced and submitted at Deadline 4 (20 April 2020).

7. ASSUMPTIONS AND LIMITATIONS

7.1.1. The following assumptions and limitations apply to this assessment.

AIR QUALITY

7.1.2. The following assumptions and limitations have been made for air quality:

a. There would be no change in operational traffic data from **Chapter 5: Air Quality** of the ES [APP-026].
b. There would be no increase in construction traffic movements during the construction phase.
c. There would be no increase in material in/out of the construction site compared to Allerdene embankment option and Allerdene viaduct option.

CULTURAL HERITAGE

7.1.3. There are no assumptions and limitations.

LANDSCAPE AND VISUAL

7.1.4. The following assumptions and limitations apply to the landscape and visual assessment:

a. The assessment assumes that the overall bridge height would be the same as Allerdene embankment and Allerdene viaduct option.
b. The assessment assumes that the engineered soil slope could be seeded with a grass seed mix effectively to provide a green appearance.
c. The assessment assumes that the engineered soil slope would be maintained clear of
d. woody vegetation.
e. The assessment assumes that the mitigation strategy for woodland and shrubs and trees would be comparable to that proposed for the Allerdene three span viaduct option.
f. The assessment assumes that maintenance operations could be carried out in accordancewith the information provided by the Applicant's Delivery Integration Partner (DIP).
g. The assessment is limited in that it is a desk-based assessment, based on historical knowledge and assessments.

BIODIVERSITY

7.1.5. There are no assumptions or limitations.

GEOLOGY AND SOILS

7.1.6. There are no assumptions or limitations.

MATERIAL RESOURCES

7.1.7. The following assumptions and limitations apply to the material resources assessment:

a. The assessment is based on the information provided by the 'Applicant's DIP in relation tothe design aspects of Allerdene three span viaduct option.
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 Principal Contractor will apply best working practice in relation to
d. material resources to maximise the recycled content of materials and minimise the use of primary material resources. required for the Allerdene Three Span Viaduct Option.
e. It is assumed that the Principal Contractor will apply the Waste Hierarchy during construction of the Allerdene Three Span Viaduct Option and make every effort to reduce waste generated and recover and divert waste from landfill.

NOISE AND VIBRATION

7.1.8. The following assumptions and limitations apply to the noise and vibration assessment:

a. The construction methods for Allerdene three span viaduct option are similar to those for
b. Allerdene embankment option and Allerdene viaduct option.
c. Construction phase duration would be reduced compared to the worst-case assessment in Chapter 11: Noise and Vibration of the ES [APP-032].
d. There would be no changes to the type and amount of piling.

POPULATION AND HUMAN HEALTH

7.1.9. The following assumptions and limitations apply to the population and human health assessment:

a. The impacts on Human Health has been concluded on the basis that the air quality and
b. noise teams display no further adverse findings resulting from the Allerdene three span
c. viaduct option.
d. Construction traffic routes and access would be the same as previously assessed.
e. The impact to rail travellers is subject to the level of disruption from night time track closures (overnight, weekend possessions) being similar to other options assessed originally.

ROAD DRAINAGE AND THE WATER ENVIRONMENT

7.1.10. The potential effects would be the same as those identified in **Chapter 13: Road Drainage and the Water Environment** of the ES **[APP-034]** and agreed with the Environment Agency for Allerdene embankment option assuming the following:

a. There would be no change to the culvert size and arrangement as per the embankment option.
b. There would be no changes to the channel downstream of the embankment – assumed to be the same as that assessed in Chapter 13: Road Drainage and the Water Environment of the ES **[APP-034]** for the embankment option embankment option.
c. There would be no changes / value engineering of the channel and its banks.
d. The length of the proposed culvert is minimised – assumed to be the same as that assessed in Chapter 13: Road Drainage and the Water Environment of the ES [**APP-034]** for the embankment option.
e. The head walls / inlet arrangement of the culvert are assumed to be the same as that assessed in Chapter 13: Road Drainage and the Water Environment of the ES [**APP-034**] for the embankment option.

CLIMATE

7.1.11. The following assumptions and limitations apply to the climate assessment:

Effects of the Scheme on Climate

a. At the time of writing **Chapter 14: Climate** of the ES [**APP-035**] and this assessment, there is no specific guidance or carbon emissions thresholds, which, if exceeded, are considered significant.
b. The assessment is based on the information provided by the Applicant's DIP.

Vulnerability of the Scheme to Climate Change

a. At the time of writing **Chapter 14: Climate** of the ES **[APP-035]** and this assessment, there is no agreed methodology that should be applied for assessing the vulnerability of major schemes, including road infrastructure, under the new EIA regulations. Therefore, the approach developed for **Chapter 14: Climate** of the ES **[APP-035]** has been applied in this assessment based on existing best practice in collaboration with Highways England and WSP climate specialists.
b. The determination of resilience has been undertaken under the assumption that robust design standards would be adhered to where detailed information is unavailable.

CUMULATIVE AND COMBINED ASSESSMENT

7.1.12. There are no assumptions or limitations.

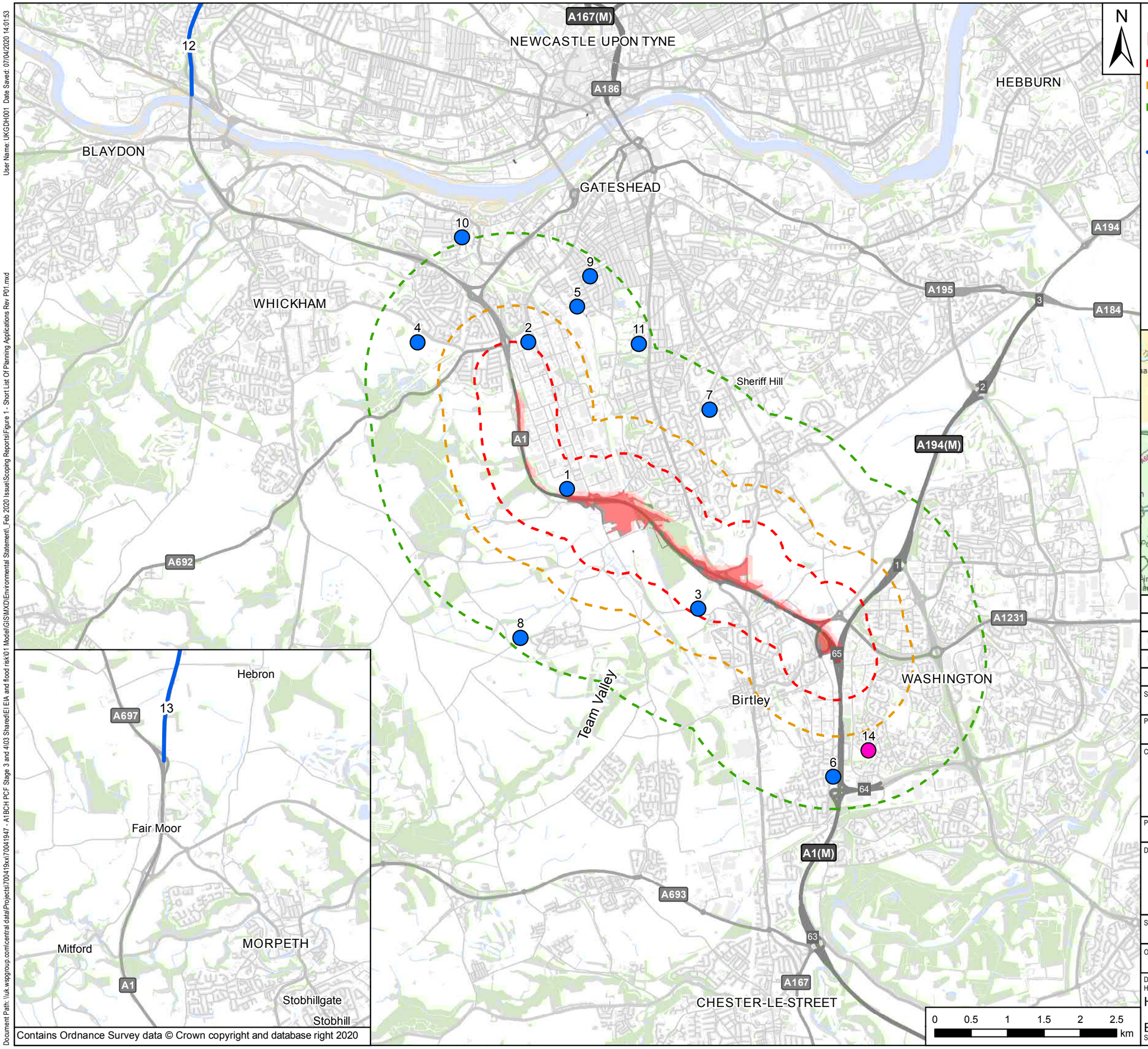
8. GLOSSARY

Acronym	Definition
BNL	Basic Noise Levels
CA	Conservation Area
CEnv	Chartered Environmentalist
CMLI	Chartered membership of the Landscape Institute
EIA	Environmental Impact Assessment
ES	Environmental Statement
DCO	Development Consent Order
GHG	Greenhouse Gas
GradIEMA	Graduate member of Institute of Environmental Management Assessment
HPI	Habitats of Principal Importance
HGV	Heavy Goods Vehicle
IES	Institute of Environmental Sciences
LWS	Local Wildlife Site
MCIfA	Member of the Chartered Institute for Archaeologists
MCIEEM	Full member of the Chartered Institute of Ecology and Environmental Management
MICE	Member of Institute of Chartered Engineers
MIOA	Member of the Institute of Acoustics
NERC	Natural Environment and Rural Communities
PIEMA	Practitioner member of Institute of Environmental Management Assessment
PINS	Planning Inspectorate

Acronym	Definition
PM	Particulate Matter
UK	United Kingdom

Appendix A.1

FIGURES



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

Suitability

Status

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: HE551462 | Originator: WSP | Volume: 6.2 | Revision: P02

B2CH | Section | Type | ID | Direction | Type | Role | Number | PW Stage Code

Appendix B

ENVIRONMENTAL CONSULTATION RECORDS

Macmillan, Nic

From: Williams, Andrew
Sent: 27 February 2020 15:25
To: Macmillan, Nic
Subject: FW: A1 BCH Additional Assessment Scoping

From: Janet Charlton <JanetCharlton@Gateshead.Gov.UK>
Sent: 18 February 2020 17:57
To: Williams, Andrew <Andrew.R.Williams@wsp.com>
Subject: RE: A1 BCH Additional Assessment Scoping

Andy,

This is all OK, thank you.

Janet

From: Williams, Andrew <Andrew.R.Williams@wsp.com>
Sent: 14 February 2020 08:04
To: Janet Charlton <JanetCharlton@Gateshead.Gov.UK>
Cc: Rothwell, Jodie <Jodie.Rothwell@wsp.com>; Stuart, Aona <Aona.Stuart@wsp.com>
Subject: RE: A1 BCH Additional Assessment Scoping

Good morning Janet

I was wondering if you had had an opportunity to review the information below to help us ensure that the scope of the additional assessments is appropriate and will provide Gateshead Council with the necessary information for the application.

Kind regards

Andy

From: Williams, Andrew
Sent: 11 February 2020 16:18
To: JanetCharlton@Gateshead.Gov.UK
Cc: Rothwell, Jodie <Jodie.Rothwell@wsp.com>; Stuart, Aona <Aona.Stuart@wsp.com>
Subject: A1 BCH Additional Assessment Scoping

Good afternoon Janet

Further to our telephone conversation regarding the additional assessments that we have been asked to consider I have outlined the scope for each below and would appreciate it if you could review and respond accordingly so that you are satisfied with the assessments once forwarded for comment. To aid in locating the relevant documents I have included the relevant document reference from the A1 BCH Document library located here:

https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR010031/TR010031-000602-A1Birtley%20to%20Coal%20House%20Examination%20Library.pdf

Additional Temporary Land take for compound off Lamesley Road/Smithy Lane

Landscape and Visual Scope		
Landscape character Construction (daytime and night time)	In	
Landscape character Operation	Out	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.
Visual Amenity Construction (daytime and night time)	In	
Visual Amenity Operation	Out	The landscape would, following construction, be returned to its existing agricultural land use and permanent impacts on views of the site would not occur.

For landscape character the assessment would focus on the impacts occurring directly within LCA 1 – Team Valley (APP-054).

For the visual assessment the receptors that would be included within the assessment would include:

Visual (refer to APP-057 and APP-121)	
Residential	R5, R7, R8, R10
PRoW	P1a, P1b, P3, P4, P5, P6, P7
Highways	H1, H2
Other	O2, O3, O5, O7

No additional montages are proposed for the assessment of these temporary effects.

Three Span Viaduct Option

Landscape and Visual Scope		
Landscape character Construction (daytime and night time)	In	
Landscape character Operation	In	
Visual Amenity Construction (daytime and night time)	In	
Visual Amenity Operation	In	

For landscape character the assessment would focus on the impacts occurring directly within LCA 1 – Team Valley. (APP-054)

For the visual assessment the receptors that would be included within the assessment would include:

Visual (refer to APP-057 and APP-121)	
Residential	R2, R7, R8, R38, R39, R40
PRoW	P3, P4, P5, P6, P7, P23

Highways	H1, H2, H8
Other	O2, O3, O4, O5, O7

In addition, the following Viewpoints for which photomontages have been prepared will be updated to include the proposed three span viaduct option:

- Viewpoint 5 – Banesley Lane Woodland (APP-057, APP-062 and APP-063)
- Viewpoint 6 – Lamesley Road (APP-057, APP-064 and APP-065)

If you could review the above information in relation to the additional assessment work and confirm that you happy with the outlined scope and advise if you consider this to be appropriate in order to identify any potential significant effects that might arise.

Kind regards,

Andy Williams ***BA (hons), Grad Dip, CMLI***
Technical Director

T +44 (0)161 6028817
[redacted]

WSP Global Inc.
No 8 First Street
Manchester
M15 4RP

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Important Information

Date: 06 April 2020
Our ref: 312269, Case 14721
Your ref: TR010031

Customer Services
Hornbeam House
Crewe Business Park
Electra Way
Crewe
Cheshire
CW1 6GJ

T 0300 060 3900

Ms N. Wilkes
Project Manager, A1 Birtley to Coal House
Highways England
Lateral
8 City Walk
Leeds
LS11 9AT

BY EMAIL ONLY

Dear Ms Wilkes

Planning consultation: Consultation on amendment to the Development Consent Order Application – 17 March 2020 to 14 April 2020
Location: A1 Birtley to Coal House, Gateshead

Thank you for your consultation on the above dated 16 March 2020 which was received by Natural England on 17 March 2020.

Natural England is a non-departmental public body. Our statutory purpose is to ensure that the natural environment is conserved, enhanced, and managed for the benefit of present and future generations, thereby contributing to sustainable development.

Additional land at Junction 67 for material stockpile during construction
Having considered the detail in the ES Addendum, and in particular the information relating to biodiversity impacts, Natural England does not consider the changes to be of a significance that would warrant a different opinion from that detailed in our Relevant and Written Representations to the Planning Inspectorate. I am aware that Wildlife Licensing colleagues are in conversation with your consultants regarding the implications for Letters of No Impediment for the scheme, and understand that any further information that may be required will be provided to enable these letters to be produced.

Three Span Viaduct option for replacement of Allerdene Bridge
Having considered the detail in the ES Addendum Natural England does not consider the changes to warrant an alteration to the position we have previously detailed to the Planning Inspectorate in Relevant and Written Representations for this scheme, and have no comments to make.

We would be happy to comment further should the need arise but if in the meantime you have any queries please do not hesitate to contact us.

For any queries relating to the specific advice in this letter only please contact me on 0208 0265533 or andrew.whitehead@naturalengland.org.uk. For any new consultations, or to provide further information on this consultation please send your correspondences to consultations@naturalengland.org.uk.

Yours sincerely

Andrew Whitehead
Northumbria Area Team

Appendix C

VISUAL EFFECTS SCHEDULE – ADDENDUM THREE SPAN VIADUCT OPTION

CONTENTS

TABLES

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
R2		Banesley Lane: Oak Lodge	1	Detached 2 storey, generally large windows of mixed shape, front elevation	400m	Open sloping pasture in foreground disturbed by Lamesley Road and narrow view along A1 corridor with traffic visible emerging from Longacre Wood to Coach Road. Long distance views to Gateshead urban area beyond A1. **Sensitivity: High**	**Construction**: Allerdene compound between Lamesley Road and Longacre Wood - 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. Narrow view along road corridor which continues to be filtered by retained intervening planting, Lamesley Road in foreground, Gateshead beyond A1. Compound and construction of bridges perceptible but small element within wider view of urban edge – **Minor adverse**	**Slight adverse**	Long distance, direct view Filtered by intervening planting Lamesley Road, Gateshead 2 upper storey windows Allerdene compound, Kingsway Viaduct, Allerdene Bridge options
							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.		
							<u>Viaduct option</u> – Increased height of Allerdene Bridge emphasised by series of piers to view along line on bridge.	**Slight 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
							<u>Embankment option</u> - Increased height of Allerdene Bridge emphasised by large embankment.	**Slight adverse**	
							<u>Three span viaduct option</u> - Increased height of Allerdene Bridge emphasised by large steep embankment – **Negligible adverse**	**Slight adverse**	
							Summer year 15: Establishment of planting at Coal House overbridge and Allerdene Bridge embankment would reinstate view as before construction		
							<u>Viaduct option</u> – Increased height of Allerdene Bridge emphasised by series of piers to view along line on bridge– **Negligible adverse**	**Slight adverse**	
							<u>Embankment option</u> - Increased height of Allerdene Bridge with planted embankment – **Negligible adverse**	**Slight adverse**	
							<u>Three span viaduct option</u> - Increased height of Allerdene Bridge emphasised by large steep embankment – **Negligible adverse**	**Slight adverse**	
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	**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 - 3 years. Vegetation clearance at Coal	**Large adverse**	Mid distance, oblique view Filtered by Longacre Wood Pylons, lighting tower, Gateshead Rear elevation

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
						visible within the context of the A1. **Sensitivity: High**	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**		windows Allerdene compound, Kingsway Viaduct, Allerdene Bridge
							Winter year 1: Reinstated compound area would be in foreground, increased awareness of traffic on the A1. Reinstated AGI would be visible in the foreground.		
							<u>Viaduct option</u> – Allerdene Bridge realigned closer to properties on a series of piers – **Moderate adverse**	**Moderate adverse**	
							<u>Embankment option</u> – Allerdene Bridge realigned closer to properties on a large embankment – **Moderate adverse**	**Moderate adverse**	
							<u>Three span viaduct</u> – Allerdene Bridge realigned closer to properties on a combination of embankment and piers – **Moderate adverse**	**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
							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.		
							Viaduct option – 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**	**Moderate adverse**	
							Embankment option – 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**	**Slight adverse**	
							Three span viaduct – Absence of planting on Allerdene Bridge embankment would result in the embankment slope remining a prominent feature in combination with the viaduct piers, with traffic remaining visible along the length – **Moderate adverse**	**Moderate 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.	**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 - 3 years. Allerdene Bridge construction - 3.5 years, although the most	**Large adverse**	Mid distance, oblique view Filtered by Longacre Wood Pylons, lighting tower, Gateshead Rear elevation windows

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
						Sensitivity: High	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 mid distance for a sustained period, large scale change – **Major adverse**		Allerdene compound, Allerdene Bridge
							Winter year 1: Reinstated compound area and AGI would be in mid distance, increased awareness of traffic on the A1.		
							Viaduct option – Allerdene Bridge realigned closer to properties on a series of piers – **Moderate adverse**	**Moderate adverse**	
							Embankment option – Allerdene Bridge realigned closer to properties on a large embankment – **Moderate adverse**	**Moderate adverse**	
							Three span viaduct – Allerdene Bridge realigned closer to properties on a combination of embankment and piers – **Moderate adverse**	**Moderate adverse**	
							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.		

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
							<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**	**Moderate adverse**	
							<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**	**Slight adverse**	
							<u>Three span viaduct</u> – Absence of planting on Allerdene Bridge embankment would result in the embankment slope remaining a prominent feature in combination with the viaduct piers, with traffic remaining visible along the length – **Moderate adverse**	**Moderate adverse**	
R38	27	Woodford: 59-68, 96-111	26	Terraced 2 storey, large windows, front and rear elevation	220m	Open grassed area with mature trees and playing field in foreground, lighting columns along footpath. Woodland screens and filters views to Team Valley industrial estate, traffic on A1, Ravensworth. **Sensitivity: High**	**Construction**: 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 cleared for satellite compound and access along footpath beyond open grassed area. Narrow view along road corridor of construction of bridges, filtered by retained intervening planting, small element in foreground of views to open countryside at Ravensworth –	**Large adverse**	Mid distance, oblique view Screened and filtered by woodland Lighting columns, railway lighting tower, industrial estate Front and rear elevation windows Allerdene satellite compound, Kingsway Viaduct, 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
							Major adverse		
							Winter year 1: Traffic on Allerdene Bridge aligned higher but further away from properties and filtered by retained planting – **Negligible adverse**	**Slight adverse**	
							Summer year 15: Establishment of planting to reinstated compound area would further screen traffic on A1 - **No change**	**Neutral**	

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
R39	28	Salcombe Gardens: 79-93	8	Semi-detached 2 storey, large windows, rear elevation	140m	East Coast Main Line in cutting in foreground, A1 crossing the railway bridge, filtered views across the Team Valley open countryside. **Sensitivity: High**	**Construction**: 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. Acute view along East Coast Mainline Railway to Allerdene Bridge construction, filtered by retained intervening planting. Filtered views along Chowdene Bank to Kingsway Viaduct construction and early activity to decommission the existing AGI – **Moderate adverse**	**Moderate adverse**	Mid distance, acute view Filtered by vegetation Railway Rear elevation windows Kingsway Viaduct, Allerdene Bridge
							Winter year 1: Traffic on Allerdene Bridge aligned higher but further away from properties and filtered by retained planting. Decommissioned AGI adjacent to Chowdene Bank – **Negligible adverse**	**Slight adverse**	
							Summer year 15: As winter year 1 - not possible to screen views to Allerdene Bridge and structure would remain perceptible but a slightly greater distance – **Negligible adverse**	**Slight 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
R40	28	Salcombe Gardens: 61-77	9	Semi-detached 2 storey, large windows, rear elevation	140m	Mature woodland in foreground, filtered views of traffic on A1 and across the Team Valley open countryside. **Sensitivity: High**	**Construction**: 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. Direct view to satellite compound and Allerdene Bridge construction, filtered by retained intervening planting. Acute, filtered views along Chowdene Bank to Kingsway Viaduct construction and early activity to decommission the existing AGI – **Moderate adverse**	**Moderate adverse**	Mid distance, direct view Filtered by woodland Rear elevation windows Kingsway Viaduct, Allerdene Bridge
							Winter year 1: Traffic on Allerdene Bridge aligned higher but further away from properties and filtered by retained planting. Decommissioned AGI adjacent to Chowdene Bank – **Negligible adverse**	**Slight adverse**	
							Summer year 15: Establishment of planting to reinstated compound area would further screen traffic on A1 - **No change**	**Neutral**	

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	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. **Sensitivity: High**	**Construction**: Allerdene compound between Lamesley Road and Longacre Wood - 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**	**Slight adverse**	Long distance, oblique view Filtered by woodland Telegraph poles and wires, pylons, East Coast Main Line, Gateshead Allerdene compound, Kingsway Viaduct, Eighton Lodge overbridge, Allerdene Bridge
							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**	**Neutral**	
							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**	

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
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
							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**	
P3	4	Lamesley 1	NZ 24818 58487 NZ 25094 58249	450m	60m	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. **Sensitivity: High**	**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 - 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	**Large adverse**	Mid distance, direct view Filtered by vegetation, AGI in the foreground, Lighting columns, Gateshead Allerdene compound, Kingsway Viaduct, Allerdene Bridge

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
							would remain in the foreground, compound and construction activity would be readily apparent through vegetation – **Moderate adverse**		
							Winter year 1: Presence of the new AGI and reinstated compound area would be in foreground, increased awareness of traffic on the A1.		
							<u>Viaduct option</u> – Allerdene Bridge realigned closer to receptors on a series of piers – **Moderate adverse**	**Moderate adverse**	
							<u>Embankment option</u> – Allerdene Bridge realigned closer to receptors on a large embankment – **Moderate adverse**	**Moderate adverse**	
							<u>Three span viaduct</u> - Allerdene Bridge realigned closer to receptors on a combination of embankment and piers – **Moderate adverse**	**Moderate adverse**	
							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.		
							<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	**Moderate adverse**	

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
							would remain clearly visible – **Moderate adverse**		
							<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**	**Slight adverse**	
							<u>Three span viaduct option</u> – An absence of planting on Allerdene Bridge engineered embankment would result in the steep embankment remaining a prominent feature of the views, with traffic on the section of the bridge on piers remaining clearly visible – **Moderate adverse**	**Moderate adverse**	
P4		Lamesley 16	NZ 23268 57244NZ 22881 57035	250m	1.8km	Sloping arable field, long distance views to traffic on the A1 railway bridge and Gateshead urban area are heavily filtered by intervening woodland. **Sensitivity: High**	**Construction**: Allerdene 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, heavily filtered views to compound and elevated construction elements of Allerdene Bridge within the context of views across the valley to Gateshead - **Minor**	**Slight adverse**	Long distance, direct view filtered by woodland Gateshead Allerdene compound, Allerdene Bridge
							Winter year 1: Realignment and increased height of Allerdene Bridge would be imperceptible, view as before construction - **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
							Summer year 15: View comparable with that prior to construction - **No change**	**Neutral**	
P5		Lamesley 35	NZ 23666 56909 NZ 24168 56724	280m	1.8km	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. **Sensitivity: High**	**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 - 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**	**Slight adverse**	Long distance, oblique view Filtered by woodland Gateshead Allerdene compound, Allerdene Bridge
							Winter year 1: New AGI, realignment and increased height of Allerdene Bridge would be imperceptible, View comparable with that prior to construction - **No change**	**Neutral**	
							Summer year 15: View comparable with that prior to construction - **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
P6		Lamesley 37	NZ 24046 57733 NZ 24300 56769	600m	1.3km	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. **Sensitivity: High**	**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 - 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**	**Slight adverse**	Long distance, oblique view Filtered by woodland Gateshead Allerdene compound, Allerdene Bridge
							Winter year 1: New AGI, realignment and increased height of Allerdene Bridge would be imperceptible, View comparable with that prior to construction - **No change**	**Neutral**	
							Summer year 15: View comparable with that prior to construction - **No change**	**Neutral**	
P7		Lamesley 29	NZ 23871 56541 NZ 23816 55703	300m	2.2km	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.	**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 - 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	**Slight adverse**	Long distance, oblique view Filtered by woodland Telegraph poles and wires, pylons, East Coast Main Line, Gateshead Allerdene compound, Kingsway Viaduct, Eighton Lodge

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
						Sensitivity: High	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**		overbridge, Allerdene Bridge
							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**	**Neutral**	
							Summer year 15: View comparable with that prior to construction - **No change**	**Neutral**	
P23		Gateshead 7	NZ 25563 58668 NZ 25805 58442	120m	130m	Woodland in the foreground screens and filters views to traffic on the A1, glimpsed views to railway bridge. Long distance views across the valley to Ravensworth. **Sensitivity: High**	**Construction**: 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 cleared for satellite compound and access along footpath. Narrow view along road corridor of construction of bridges, filtered by retained intervening planting, in foreground of views to open countryside at Ravensworth – **Moderate adverse**	**Large adverse**	Mid distance, oblique view Screened and filtered by vegetation Lighting columns Allerdene satellite compound, Kingsway Viaduct, Allerdene Bridge
							Winter year 1: Traffic on Allerdene Bridge aligned higher but further away from footpath and filtered by retained planting – **Negligible adverse**	**Slight adverse**	

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: Establishment of planting to reinstated compound area would further screen traffic on A1 - **No change**	**Neutral**	

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	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. **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 - 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. Compound and bridge construction activity readily perceptible within expansive views of urban edge including industrial estate – **Minor adverse**	**Slight adverse**	Long distance, direct Screened and filtered by vegetation along A1, Longacre Wood Pylons, East Coast Main Line, industrial estate including chimneys, Gateshead Allerdene compound, Kingsway Viaduct, Allerdene Bridge
							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.		
							<u>Viaduct option</u> – Increased height of Allerdene Bridge emphasised by series of piers to view along line on bridge. – **Minor adverse**	**Slight adverse**	
							<u>Embankment option</u> - Increased height of Allerdene Bridge emphasised by large embankment – **Negligible adverse**	**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
							Three span viaduct - Increased height of Allerdene Bridge emphasised by steep embankment and bridge piers to view along line on bridge. **Minor adverse**	**Slight adverse**	
							Summer year 15: Establishment of planting at Coal House overbridge and Allerdene Bridge embankment would reinstate view as before construction - **No change**		
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 - 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**	**Slight adverse**	Long distance, oblique view Filtered by intervening vegetation Gateshead Allerdene compound, Allerdene Bridge
							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**	**Neutral**	
							Summer year 15: Establishment of planting at Allerdene Bridge embankment would reinstate view to that prior to construction - **No change**	**Neutral**	

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
O4	4	Horseworld	Commercial	Low	140m	Vegetation along Lamesley Road in foreground filters views 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. **Sensitivity: Low**	**Construction**: Early operations to construct the new AGI adjacent to Lamesley Road will occur in the foreground of the existing A1. Allerdene compound between Lamesley Road and Longacre Wood in foreground - 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**	**Moderate adverse**	Mid distance, direct view Filtered by vegetation along Lamesley Road, Pylons, telegraph poles and wires, Gateshead Allerdene compound, Kingsway Viaduct, Allerdene Bridge
							Winter year 1: Reinstated compound area would be in foreground, increased awareness of traffic on the A1. New AGI perceptible in the context of the A1 changes.		
							Viaduct option – Allerdene Bridge realigned closer to properties on a series of piers – **Moderate adverse**	**Slight adverse**	
							Embankment option – Allerdene Bridge realigned closer to properties on a large embankment – **Moderate adverse**	**Slight adverse**	
							Three span viaduct option – Allerdene Bridge realigned closer to properties on a combination of steep embankment and bridge piers – **Moderate adverse**	**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 would filter views of traffic.		
							<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**	**Slight adverse**	
							<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**	**Neutral**	
							<u>Three span viaduct option</u> – An absence of planting on Allerdene Bridge embankment would result in a prominent embankment remaining within the view and traffic on the section of the bridge on piers would remain clearly visible – **Moderate adverse**	**Slight adverse**	
O5		St Andrew's Church	Church, village hall	Moderate	550m	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. **Sensitivity: Moderate**	**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 - 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.	**Moderate adverse**	Mid distance, oblique view Filtered by Longacre Wood Pylons, street lighting columns, industrial estate, Gateshead Allerdene compound, 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
							Construction activity and compound replacing pasture in the mid distance for a sustained period, filtered by retained vegetation in foreground – **Moderate adverse**		
							Winter year 1: Reinstated compound area would be in mid distance, increased awareness of traffic on the A1. New AGI barely perceptible.		
							Viaduct option – Allerdene Bridge realigned closer to properties on a series of piers – **Moderate adverse**	**Slight adverse**	
							Embankment option – Allerdene Bridge realigned closer to properties on a large embankment – **Moderate adverse**	**Slight adverse**	
							Three span viaduct option – Allerdene Bridge realigned closer to properties on embankment and a series of piers – **Moderate adverse**	**Slight adverse**	
							Summer year 15: Establishment of planting at Coal House overbridge would filter views of traffic.		
							Viaduct option – 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**	**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
							Embankment option – 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**	**Neutral**	
							Three span viaduct option – An absence of planting on Allerdene Bridge embankment would result in a prominent embankment remaining within the view and traffic on the section of the bridge on piers would remain clearly visible – **Moderate adverse**	**Slight adverse**	
O7		Hot Tub Hideaway	Hotel	Moderate	600m	Flat pasture in foreground, disturbed by Smithy Lane embankment, traffic on A1 railway bridge, Team Valley industrial estate beyond A1. **Sensitivity: Moderate**	**Construction**: Allerdene compound between Lamesley Road and Longacre Wood in 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 distance for a sustained period, partially screened by Smithy Lane – **Moderate adverse**	**Moderate adverse**	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
							Winter year 1: Increased awareness of traffic on the A1 and Allerdene Bridge realigned closer, Smithy Lane in foreground – **Minor adverse**	**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: Planting on Allerdene Bridge embankment would soften the appearance of the landform and integrate it with adjacent areas of woodland – **Negligible adverse**	**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	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. **Sensitivity: Low**	**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 - 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**	**Moderate adverse**	Mid distance, oblique view Filtered by roadside vegetation Pylons, telegraph poles and wires, Gateshead Allerdene compound, Kingsway Viaduct, Allerdene Bridge
							Winter year 1: Reinstated compound area would be in foreground, increased awareness of traffic on the A1, with AGI immediately adjacent.		
							<u>Viaduct option</u> – Allerdene Bridge realigned closer to receptor on a series of piers – **Moderate adverse**	**Slight adverse**	
							<u>Embankment option</u> – Allerdene Bridge realigned closer to receptor on a large embankment – **Moderate adverse**	**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
							Three span viaduct option – Allerdene Bridge realigned closer to receptors on a series of piers.	**Slight adverse**	
							Summer year 15: Establishment of planting at Coal House overbridge would filter views of traffic.		
							Viaduct option – 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**	**Slight adverse**	
							Embankment option – 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**	**Neutral**	
							Three span viaduct option – An absence of planting on Allerdene Bridge embankment would result in a prominent embankment remaining within the view and traffic on the section of the bridge on piers would remain clearly visible – **Moderate adverse**	**Slight adverse**	
H2	7	Smithy Lane	NZ 25686 58192	470m	200m	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	**Construction**: Views of the 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 - 3	**Moderate adverse**	Mid distance, oblique view Screened and filtered by planting, Longacre Wood, railway bridge balustrade Pylons, railway, Gateshead

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
						to traffic on A1 and A1 railway bridge. Long distance views to Gateshead urban area. **Sensitivity: Low**	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 mid distance for a sustained period – **Major adverse**		Allerdene compound, Allerdene Bridge
							Winter year 1: Reinstated compound area would be in mid distance, increased awareness of traffic on the A1 with the AGI immediately adjacent.		
							<u>Viaduct option</u> – Allerdene Bridge realigned closer to properties on a series of piers – **Moderate adverse**	**Slight adverse**	
							<u>Embankment option</u> – Allerdene Bridge realigned closer to properties on a large embankment – **Moderate adverse**	**Slight adverse**	
							<u>Three span viaduct option</u> – Allerdene Bridge realigned closer to properties on a series of piers – **Moderate adverse**	**Slight adverse**	
							Summer year 15: Establishment of planting at Coal House overbridge would filter views of traffic and screen AGI.		
							<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**	**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
							Embankment option – 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**	**Neutral**	
							Three span viaduct option – An absence of planting on Allerdene Bridge embankment would result in a prominent embankment remaining within the view and traffic on the section of the bridge on piers would remain clearly visible – **Moderate adverse**	**Slight adverse**	
H3	9	Smithy Lane	NZ 25764 58276	40m	0m	Long distance views along the A1 corridor with the Harlow Green multi-storey blocks and Angel of the North visible above woodland to the south, and Team Valley Industrial Estate and Ravensworth visible to the north. **Sensitivity: Low**	**Construction**: View north - Filtered views of the early operations to construct the new AGI adjacent to Lamesley Road will occur in the context of the existing A1. 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. Narrow view along road corridor, vegetation clearance for Allerdene Bridge would increase awareness of Team Valley Industrial Estate. View south - Construction activity would take place over 1.5 years: widening northbound carriageway - 3 months, widening southbound carriageway - 3 months, central reserve - 6 months. Narrow view along road corridor of construction activity in the foreground – **Moderate adverse**	**Slight adverse**	Foreground, oblique view Harlow Green multi-storey blocks, Team Valley Industrial Estate Kingsway Viaduct, Allerdene Bridge

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
							Winter year 1: View north - Allerdene Bridge realigned higher and further south, longer distance views along road corridor to Team Valley Industrial Estate. View south - additional lane to northbound carriageway – **Minor adverse**	**Slight adverse**	
							Summer year 15: View north - establishment of planting on Allerdene Bridge embankment would filter views of traffic and Team Valley Industrial Estate – **Negligible adverse**	**Neutral**	
H8	28	Chowdene Bank	NZ 25407 58696	500m	20m	Views to traffic on the A1 railway bridge and Coal House overbridge are screened and filtered by the railway bridge balustrade and roadside planting. Long distance views along road corridor to Ravensworth. **Sensitivity: Low**	**Construction**: Views of the early operations to decommission the existing AGI adjacent to Chowdene Bank will occur in the context of the existing A1. 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. Oblique view along East Coast Main Line to Allerdene Bridge construction, filtered by retained intervening planting. Filtered views along road corridor to Kingsway Viaduct construction – **Moderate adverse**	**Slight adverse**	Mid distance, oblique view. Filtered by vegetation Railway, lighting columns, signage Kingsway Viaduct, Allerdene Bridge

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
							Winter year 1: Traffic on Allerdene Bridge aligned higher but further away from road, with restored decommissioned AGI in the foreground – **Negligible adverse**	**Neutral**	
							Summer year 15: As winter year 1 - not possible to screen views to Allerdene Bridge, with restored decommissioned AGI in the foreground – **Negligible adverse**	**Neutral**	

Appendix D

FIGURES

LE2.7 Scattered trees to integrate the scheme (EFB) and enhance screening (EFA)

Existing noise barrier

LE2.7 Scattered trees (EFD) to enhance screening (EFA)

LE4.4 Native hedgerow with trees (EFD) to enhance screening (EFA)

LE2.7 Scattered trees (EFD) to enhance screening (EFA)

LE2.2 Woodland edge (EFD) to enhance screening (EFA)

LE 1.3 Species rich grassland (EFD)

LE2.4 Linear belts of shrubs and trees (EFD) to enhance screening (EFA)

LE2.2 Woodland edge planting (EFD) to integrate the scheme (EFB)

LE2.2 Woodland edge planting (EFD) to integrate the scheme (EFB)

LE2.7 Scattered trees (EFD) to integrate the scheme (EFB)

LE2.2 Woodland edge planting (EFD) to integrate the scheme (EFB)

LE2.7 Scattered trees (EFD) to integrate the scheme (EFB)

LE1.3 Species rich grassland (EFD)

LE2.7 Scattered trees (EFD) to integrate the scheme (EFB)

LE2.1 Woodland planting to integrate the scheme (EFB)

LE2.2 Woodland edge planting to integrate the scheme (EFB)

LE4.2 Native species hedge to integrate the scheme (EFB) and provide screening (EFA)

LE2.1 Woodland (EFD) to integrate the scheme (EFB)

EAST COAST MAINLINE

EXISTING BRIDGE TO BE DEMOLISHED

A1 SOUTH BOUND

A1 NORTH BOUND

LE2.7 Scattered trees (EFD) to integrate the scheme (EFB)

LE4.2 Native species hedge to integrate the scheme (EFB) and provide screening (EFA)

LE1.3 Species rich grassland (EFD)

PROPOSED ALIGNMENT OF DRAINAGE DITCH

LE2.2 Woodland edge planting (EFD) to integrate the scheme (EFB)

LE2.1 Woodland (EFD) to integrate the scheme (EFB)

LE1.3 Species rich grassland (EFD)

LE2.1 Woodland (EFD) to integrate the scheme (EFB)

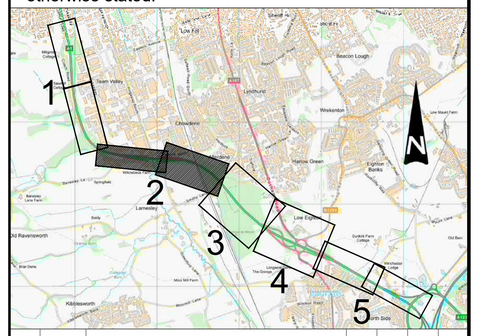
SCALE 1:1250

0m 25m 50m 100m

KEY

- SCHEME FOOTPRINT
- THE SCHEME
- EXISTING VEGETATION REMOVED
- EXISTING VEGETATION RETAINED
- LE2.1 WOODLAND
- LE2.2 WOODLAND EDGE
- LE2.4 LINEAR BELTS OF SHRUBS AND TREES
- LE2.7 SCATTERED TREES
- LE4.2 NATIVE SPECIES HEDGE
- LE4.4 NATIVE HEDGEROWS WITH TREES
- LE1.3 SPECIES RICH GRASSLAND
- LE 1.3 SPECIES RICH WET GRASSLAND FOR GREAT CRESTED NEWT HABITAT
- FENCING
- NOISE BARRIER
- Proposed gantry

All slopes and verges to be LE1.1 Amenity Grass unless otherwise stated.
All areas temporarily required for construction to be reinstated to reflect their former vegetation cover, unless otherwise stated.



Rev.	Date	Description	By	Eng' Ch'k	Disc' Ch'k	App'd
P03	Apr 20	Third Issue	CL	AW	NJA	KS
P02	Mar 20	Second Issue	CL	AW	NJA	KS
P01	Feb 20	First issue	CL	AW	NJA	KS

Suitability

Status

PINS Reference Number: TR010031

Client: highways england

Project Title: A1 Birtley to Coal House Scheme

Drawing Title: Sheet 2d of 5
Landscape Mitigation Design - Viaduct Option 3 Span

Scale	Drawn	Eng. Check	Approved	Authorised
1:1250	CL	AW	NJA	KS
Original Size	**Date**	**Date**	**Date**	**Date**
A1	Apr 20	Apr 20	Apr 20	Apr 20

Drawing Number							Revision
HE PIN		Originator	Volume				P03
HE551462		WSP	6.2				PW Stage Code
ZZ			DR	LE	0004		Stage 3
Section	Type	ID	Direction	Type	Role	Number	

Security Class

WSP Project Number: 70041947

P02	FEB 20	AMENDMENTS FOR GANTRIES	JD	AW	AW	NJA
P01	DEC 18	FIRST ISSUE	SW	AW	AW	NJA
Rev.	Date	Description	By	Eng' Ch'k	Disc' Ch'k	App'd

Suitability

Status

PINS Reference Number

TR010031

Client

highways england

Project Title

A1 Birtley to Coal House Scheme

Drawing Title

Figure 7.7.1 Sheet 1 of 8
Viewpoint 5 - Banesley Lane Woodland
Summer Existing View

Scale	Drawn	Eng. Check	Approved	Authorised
NTS	SW	AW	AW	NJA
Original Size	**Date**	**Date**	**Date**	**Date**
A3	APRIL 19	APRIL 19	APRIL 19	APRIL 19

Drawing Number
HE PIN: HE551462 | Originator: WSP | Volume: 6.2
ZZ | | | PH | LE | 003
Section | Type | ID | Direction | Type | Role | Number

Revision: P02

PW Stage Code: Stage 3

OS Reference : NZ 24290 58167
Direction of View: NORTH EAST
Distance to Scheme: 550m

Horizontal Field of View: 120°
Vertical Field of View: 27°
Camera: CANON EOS 5DS

Lens: Sigma 50mm f1.4 DG HSM | A (Canon)
Camera Height: 1.5m
Date & Time: 31/7/18 15:30

Not representative of scale and distance

Security Class

WSP Project Number: 70041947

Rev.	Date	Description	By	Eng' Ch'k	Disc' Ch'k	App'd
P02	FEB 20	AMENDMENTS FOR GANTRIES	JD	AW	AW	NJA
P01	DEC 18	FIRST ISSUE	SW	AW	AW	NJA

Suitability: Suitable for Review and Comment

Status: S3

PINS Reference Number: TR010031

Client: highways england

Project Title: A1 Birtley to Coal House Scheme

Drawing Title: Figure 7.7.1 Sheet 2 of 8
Viewpoint 5 - Banesley Lane Woodland
Viaduct Option (3 Span) Summer Year of Opening

Scale	Drawn	Eng. Check	Approved	Authorised
NTS	SW	AW	AW	NJA
Original Size	**Date**	**Date**	**Date**	**Date**
A1	SEPTEMBER '18	SEPTEMBER '18	SEPTEMBER '18	SEPTEMBER '18

Drawing Number: HE PIN HE551462 | Originator WSP | Volume ELS | Revision P02

ZZ | Section | Type | ID | Direction | PH Type | LE Role | Number | PW Stage Code Stage 3

Security Class

WSP Project Number: 70041947

Rev.	Date	Description	By	Eng' Ch'k	Disc' Ch'k	App'd
P02	FEB 20	AMENDMENTS FOR GANTRIES	JD	AW	AW	NJA
P01	DEC 18	FIRST ISSUE	SW	AW	AW	NJA

Suitability: Suitable for Review and Comment

Status: S3

PINS Reference Number: TR010031

Client: highways england

Project Title: A1 Birtley to Coal House Scheme

Drawing Title: Figure 7.7.1 Sheet 3 of 8
Viewpoint 5 - Banesley Lane Woodland
Viaduct Option (3 Span) Summer Design Year

Scale	Drawn	Eng. Check	Approved	Authorised
NTS	SW	AW	AW	NJA
Original Size	**Date**	**Date**	**Date**	**Date**
A1	SEPTEMBER '18	SEPTEMBER '18	SEPTEMBER '18	SEPTEMBER '18

Drawing Number: HE PIN HE551462 | Originator WSP | Volume ELS | Revision P02

ZZ | Section | Type | ID | Direction | PH Type | LE Role | Number | PW Stage Code Stage 3

Security Class

WSP Project Number: 70041947

OS Reference :	NZ 24290 58167	Horizontal Field of View:	120°	Lens:	Sigma 50mm f1.4 DG HSM | A (Canon)	V s length. If viewing this image on a screen, enlarge to full screen height.	Figure 7.7.1 Sheet 4 of 8 Viewpoint 5 - Banesley Lane Woodland Viaduct Option (3 Span) Summer 40° Single Frame HE551462-WSP-6.2-ZZ-PH-LE-003
Direction of View:	NORTH EAST	Vertical Field of View:	27°	Camera Height:	1.5m		
Distance to Scheme:	550m	Camera:	CANON EOS 5DS	Date & Time:	31/7/18 15:30		

Security Class

WSP Project Number: 70041947

P02	FEB 20	AMENDMENTS FOR GANTRIES	JD	AW	AW	NJA
P01	DEC 18	FIRST ISSUE	SW	AW	AW	NJA
Rev.	Date	Description	By	Eng' Ch'k	Disc' Ch'k	App'd

Suitability

Status

PINS Reference Number

TR010031

Client

highways england

Project Title

A1 Birtley to Coal House Scheme

Drawing Title

Figure 7.7.1 Sheet 5 of 8 Viewpoint 5 - Banesley Lane Woodland Winter Existing View

Scale	Drawn	Eng. Check	Approved	Authorised
NTS	SW	AW	AW	NJA
Original Size	**Date**	**Date**	**Date**	**Date**
A3	APRIL 19	APRIL 19	APRIL 19	APRIL 19

Drawing Number
HE PIN: HE551462 | Originator: WSP | Volume: 6.2 | Revision: P02

ZZ | | | PH | LE | 003 | PW Stage Code: Stage 3
Section | Type | ID | Direction | Type | Role | Number

OS Reference : NZ 24290 58167
Direction of View: NORTH EAST
Distance to Scheme: 550m

Horizontal Field of View: 120°
Vertical Field of View: 27°
Camera: CANON EOS 5DS

Lens: Sigma 50mm f1.4 DG HSM | A (Canon)
Camera Height: 1.5m
Date & Time: 13/11/18 15:56

Not representative of scale and distance

Security Class

WSP Project Number: 70041947

OS Reference : NZ 24290 58167
Direction of View: NORTH EAST
Distance to Scheme: 550m

Horizontal Field of View: 120°
Vertical Field of View: 27°
Camera: CANON EOS 5DS

Lens: Sigma 50mm f1.4 DG HSM | A (Canon)
Camera Height: 1.5m
Date & Time: 13/11/18 15:56

V s length. If viewing this image on a screen, enlarge to full screen height.

Rev.	Date	Description	By	Eng' Ch'k	Disc' Ch'k	App'd
P02	FEB 20	AMENDMENTS FOR GANTRIES	JD	AW	AW	NJA
P01	DEC 18	FIRST ISSUE	SW	AW	AW	NJA

Suitability: Suitable for Review and Comment
Status: S3

PINS Reference Number: TR010031

Client: highways england

Project Title: A1 Birtley to Coal House Scheme

Drawing Title: Figure 7.7.1 Sheet 6 of 8
Viewpoint 5 - Banesley Lane Woodland Viaduct
Option (3 Span) Winter Year of Opening

Scale	Drawn	Eng. Check	Approved	Authorised
NTS	SW	AW	AW	NJA
Original Size	Date	Date	Date	Date
A1	SEPTEMBER '18	SEPTEMBER '18	SEPTEMBER '18	SEPTEMBER '18

Drawing Number HE PIN: HE551462 | Originator: WSP | Volume: ELS
ZZ (Section) | (Type) | (ID) | (Direction) | PH (Type) | LE (Role) | (Number)
Revision: P02
PW Stage Code: Stage 3

Security Class

WSP Project Number: 70041947

OS Reference : NZ 24290 58167
Direction of View: NORTH EAST
Distance to Scheme: 550m

Horizontal Field of View: 120°
Vertical Field of View: 27°
Camera: CANON EOS 5DS

Lens: Sigma 50mm f1.4 DG HSM | A (Canon)
Camera Height: 1.5m
Date & Time: 13/11/18 15:56

V s length. If viewing this image on a screen, enlarge to full screen height.

Rev.	Date	Description	By	Eng' Ch'k	Disc' Ch'k	App'd
P02	FEB 20	AMENDMENTS FOR GANTRIES	JD	AW	AW	NJA
P01	DEC 18	FIRST ISSUE	SW	AW	AW	NJA

Suitability: Suitable for Review and Comment
Status: S3

PINS Reference Number: TR010031

Client: highways england

Project Title: A1 Birtley to Coal House Scheme

Drawing Title: Figure 7.7.1 Sheet 7 of b
Viewpoint 5 - Banesley Lane Woodland
Viaduct Option (3 Span) Winter Design Year

Scale	Drawn	Eng. Check	Approved	Authorised
NTS	SW	AW	AW	NJA
Original Size	**Date**	**Date**	**Date**	**Date**
A1	SEPTEMBER '18	SEPTEMBER '18	SEPTEMBER '18	SEPTEMBER '18

Drawing Number: HE PIN HE551462 | Originator WSP | Volume ELS
ZZ | | | PH | LE
Section | Type | ID | Direction | Type | Role | Number
Revision: P02
PW Stage Code: Stage 3

Security Class

WSP Project Number: 70041947

OS Reference :	NZ 24290 58167	Horizontal Field of View:	120°	Lens:	Sigma 50mm f1.4 DG HSM | A (Canon)	V	s length. If viewing this image on a screen, enlarge to full screen height.
Direction of View:	NORTH EAST	Vertical Field of View:	27°	Camera Height:	1.5m		
Distance to Scheme:	550m	Camera:	CANON EOS 5DS	Date & Time:	13/11/18 15:56		

Figure 7.7.1 Sheet 8 of 8
Viewpoint 5 - Banesley Lane Woodland
Viaduct Option (3 Span) Winter 40° Single Frame
HE551462-WSP-6.2-ZZ-PH-LE-003

Security Class

WSP Project Number: 70041947

P02	FEB 20	AMENDMENTS FOR GANTRIES	JD	AW	AW	NJA
P01	DEC 18	FIRST ISSUE	SW	AW	AW	NJA
Rev.	Date	Description	By	Eng' Chk	Disc' Chk	App'd

Suitability: Suitable for Information

Status: S2

PINS Reference Number: TR010031

Client: highways england

Project Title: A1 Birtley to Coal House Scheme

Drawing Title: Figure 7.7.2 Sheet 1 of 8
Viewpoint 6 - Lamesley Road
Summer Existing View

OS Reference :	NZ 25165 58076	Horizontal Field of View:	100°	Lens:	Sigma 50mm f1.4 DG HSM | A (Canon)	Not representative of scale and distance			
Direction of View:	NORTH EAST	Vertical Field of View:	27°	Camera Height:	1.5m				
Distance to Scheme:	450m	Camera:	CANON EOS 5DS	Date & Time:	1/8/18 16:24				

Scale	Drawn	Eng. Check	Approved	Authorised
NTS	SW	AW	AW	NJA
Original Size	Date	Date	Date	Date
A1	SEPTEMBER '18	SEPTEMBER '18	SEPTEMBER '18	SEPTEMBER '18

Drawing Number HE PIN: HE551462 | Originator: WSP | Volume: ELS

ZZ (Section) | (Type) | (ID) | (Direction) | PH (Type) | LE (Role) | 003 (Number)

Revision: P02

PW Stage Code: Stage 3

Security Class

WSP Project Number: 70041947

P02	FEB 20	AMENDMENTS FOR GANTRIES	JD	AW	AW	NJA
P01	DEC 18	FIRST ISSUE	SW	AW	AW	NJA
Rev.	Date	Description	By	Eng' Ch'k	Disc' Ch'k	App'd

Suitability: Suitable for Information

Status: S2

PINS Reference Number: TR010031

Client: highways england

Project Title: A1 Birtley to Coal House Scheme

Drawing Title: Figure 7.7.2 Sheet 11 of 26
Viewpoint 3 - Lamesley Road
Viaduct Option (3 Span) Summer Year of Opening

Scale: NTS	Drawn: SW	Eng. Check: AW	Approved: AW	Authorised: NJA
Original Size: A1	Date: SEPTEMBER '18	Date: SEPTEMBER '18	Date: SEPTEMBER '18	Date: SEPTEMBER '18

Drawing Number HE P/N: HE551462 | Originator: WSP | Volume: ELS | Revision: P02

ZZ | | PH | LE | 003 | PW Stage Code: Stage 3
Section | Type | ID | Direction | Type | Role | Number

OS Reference :	NZ 25165 58076	Horizontal Field of View:	100°	Lens:	Sigma 50mm f1.4 DG HSM | A (Canon)	Not representative of scale and distance
Direction of View:	NORTH EAST	Vertical Field of View:	27°	Camera Height:	1.5m	
Distance to Scheme:	450m	Camera:	CANON EOS 5DS	Date & Time:	13/11/18 15:32	

Security Class

P02	FEB 20	AMENDMENTS FOR GANTRIES	JD	AW	AW	NJA
P01	DEC 18	FIRST ISSUE	SW	AW	AW	NJA
Rev.	Date	Description	By	Eng' Ch'k	Disc' Ch'k	App'd

Suitability: Suitable for Information

Status: S2

PINS Reference Number: TR010031

Client: highways england

Project Title: A1 Birtley to Coal House Scheme

Drawing Title: Figure 7.7.2 Sheet 12 of 26
Viewpoint 6 - Lamesley Road
Viaduct Option (3 Span) Summer Design Year

Scale	Drawn	Eng. Check	Approved	Authorised
NTS	SW	AW	AW	NJA
Original Size	**Date**	**Date**	**Date**	**Date**
A1	SEPTEMBER '18	SEPTEMBER '18	SEPTEMBER '18	SEPTEMBER '18

Drawing Number HE P/N: HE551462 | Originator: WSP | Volume: ELS | Revision: P02

ZZ | Section | Type | ID | Direction | PH Type | LE Role | 003 Number | PW Stage Code: Stage 3

OS Reference :	NZ 25165 58076	Horizontal Field of View:	100°	Lens:	Sigma 50mm f1.4 DG HSM | A (Canon)
Direction of View:	NORTH EAST	Vertical Field of View:	27°	Camera Height:	1.5m
Distance to Scheme:	450m	Camera:	CANON EOS 5DS	Date & Time:	13/11/18 15:32

Not representative of scale and distance

Security Class

WSP Project Number: 70041947

OS Reference :	NZ 25165 58076	Horizontal Field of View:	40°	Lens:	Sigma 50mm f1.4 DG HSM | A (Canon)
Direction of View:	NORTH EAST	Vertical Field of View:	27°	Camera Height:	1.5m
Distance to Scheme:	450m	Camera:	CANON EOS 5DS	Date & Time:	1/8/18 16:24

View flat at comfortable arm's length. If viewing this image on a screen, enlarge to full screen height.

Figure 7.7.2 Sheet 13 of 26
Viewpoint 6 - Lamesley Road
Viaduct Option (7 Span) Summer 40° Single Frame
HE551462-WSP-ELS-ZZ-PH-LE-003

Security Class

Rev.	Date	Description	By	Eng' Chk	Disc' Chk	App'd
P02	FEB 20	AMENDMENTS FOR GANTRIES	JD	AW	AW	NJA
P01	DEC 18	FIRST ISSUE	SW	AW	AW	NJA

Suitability: Suitable for Information

Status: S2

PINS Reference Number: TR010031

Client: highways england

Project Title: A1 Birtley to Coal House Scheme

Drawing Title: Figure 7.7.2 Sheet 14 of 26
Viewpoint 6 - Lamesley Road
Winter Existing View

Scale	Drawn	Eng. Check	Approved	Authorised
NTS	SW	AW	AW	NJA
Original Size	**Date**	**Date**	**Date**	**Date**
A1	SEPTEMBER '18	SEPTEMBER '18	SEPTEMBER '18	SEPTEMBER '18

Drawing Number: HE PIN HE551462 | Originator WSP | Volume ELS | Revision P02

ZZ | Section | Type | ID | Direction | PH Type | LE Role | 003 Number | PW Stage Code: Stage 3

OS Reference : NZ 25165 58076
Direction of View: NORTH EAST
Distance to Scheme: 450m

Horizontal Field of View: 100°
Vertical Field of View: 27°
Camera: CANON EOS 5DS

Lens: Sigma 50mm f1.4 DG HSM | A (Canon)
Camera Height: 1.5m
Date & Time: 13/11/18 15:32

Not representative of scale and distance

Security Class

WSP Project Number: 70041947

P02	FEB 20	AMENDMENTS FOR GANTRIES	JD	AW	AW	NJA
P01	DEC 18	FIRST ISSUE	SW	AW	AW	NJA
Rev.	Date	Description	By	Eng' Chk	Disc' Chk	App'd

Suitability: Suitable for Information

Status: S2

PINS Reference Number: TR010031

Client: highways england

Project Title: A1 Birtley to Coal House Scheme

Drawing Title: Figure 7.7.2 Sheet 24 of 26
Viewpoint 6 - Lamesley Road
Viaduct Option (3 Span) Winter Design Year

Scale	Drawn	Engineer	Approved	Authorised
NTS	SW	AW	AW	NJA
Original Size	Date	Date	Date	Date
A1	SEPTEMBER '18	SEPTEMBER '18	SEPTEMBER '18	SEPTEMBER '18

Drawing Number: HE PIN HE551462 | Originator WSP | Volume ELS | Revision P02

ZZ | Section | Type | ID | Direction | PH Type | LE Role | 003 Number | PW Stage Code Stage 3

OS Reference :	NZ 25165 58076	Horizontal Field of View:	100°	Lens:	Sigma 50mm f1.4 DG HSM | A (Canon)	Not representative of scale and distance
Direction of View:	NORTH EAST	Vertical Field of View:	27°	Camera Height:	1.5m	
Distance to Scheme:	450m	Camera:	CANON EOS 5DS	Date & Time:	13/11/18 15:32	

Security Class

WSP Project Number: 70041947

P02	FEB 20	AMENDMENTS FOR GANTRIES	JD	AW	AW	NJA
P01	DEC 18	FIRST ISSUE	SW	AW	AW	NJA
Rev.	Date	Description	By	Eng' Chk	Disc' Chk	App'd

Suitability: Suitable for Information

Status: S2

PINS Reference Number: TR010031

Client: highways england

Project Title: A1 Birtley to Coal House Scheme

Drawing Title: Figure 7.7.2 Sheet 25 of 26
Viewpoint 6 - Lamesley Road
Viaduct Option (3 Span) Winter Design Year

Scale	Drawn	Eng. Check	Approved	Authorised
NTS	SW	AW	AW	NJA
Original Size	Date	Date	Date	Date
A1	SEPTEMBER '18	SEPTEMBER '18	SEPTEMBER '18	SEPTEMBER '18

Drawing Number: HE PIN HE551462 | Originator WSP | Volume ELS
ZZ | | | | PH | LE | 003
Section | Type | ID | Direction | Type | Role | Number

Revision: P02

PW Stage Code: Stage 3

OS Reference : NZ 25165 58076
Direction of View: NORTH EAST
Distance to Scheme: 450m

Horizontal Field of View: 100°
Vertical Field of View: 27°
Camera: CANON EOS 5DS

Lens: Sigma 50mm f1.4 DG HSM | A (Canon)
Camera Height: 1.5m
Date & Time: 13/11/18 15:32

Not representative of scale and distance

Security Class

WSP Project Number: 70041947

OS Reference :	NZ 25165 58076	Horizontal Field of View:	40°	Lens:	Sigma 50mm f1.4 DG HSM | A (Canon)
Direction of View:	NORTH EAST	Vertical Field of View:	27°	Camera Height:	1.5m
Distance to Scheme:	450m	Camera:	CANON EOS 5DS	Date & Time:	13/11/18 15:32

View flat at comfortable arm's length. If viewing this image on a screen, enlarge to full screen height.

Figure 7.7.2 Sheet 26 of 26
Viewpoint 6 - Lamesley Road
Viaduct Option (3 Span) Winter 40° Single Frame
HE551462-WSP-ELS-ZZ-PH-LE-003

Security Class

WSP Project Number: 70041947

P02	DEC 18	AMENDMENTS FOR GANTRIES	SW	AW	AW	NJA
P01	DEC 18	FIRST ISSUE	SW	AW	AW	NJA
Rev.	Date	Descripton	By	Eng' Ch'k	Disc' Ch'k	App'd

Suitability

Status

PINS Reference Number
TR010031

Client
highways england

Project Title
A1 Birtley to Coal House Scheme

Drawing Title
Figure 7.7.6 Sheet 1 of 8
Viewpoint 28 - Chowdene Bank
Summer Existing View

Scale	Drawn	Eng. Check	Approved	Authorised
NTS	SW	AW	AW	NJA
Oriainal Size	Date	Date	Date	Date
A3	APRIL 19	APRIL 19	APRIL 19	APRIL 19

Drawing Number
HE PIN
HE551462
Originator
WSP
Volume
6.2
Revision
P02
ZZ | | | PH | LE | 003
Section | Type | ID | Direction | Type | Role | Number
PW Stage Code
Stage 3

OS Reference : NZ 25410 58701
Direction of View: SOUTH
Distance to Scheme: 230m

Horizontal Field of View: 100°
Vertical Field of View: 39.6°
Camera: CANON EOS 5DS

Lens: Sigma 50mm f1.4 DG HSM | A (Canon)
Camera Height: 1.5m
Date & Time: 2/8/18 10:05

Not representative of scale and distance

Security Class

WSP Project Number: 70041947

Rev.	Date	Description	By	Eng' Chk	Disc' Chk	App'd
P02	DEC 18	AMENDMENTS FOR GANTRIES	SW	AW	AW	NJA
P01	DEC 18	FIRST ISSUE	SW	AW	AW	NJA

Suitability

Status

PINS Reference Number
TR010031

Client
highways england

Project Title
A1 Birtley to Coal House Scheme

Drawing Title
Figure 7.7.6 Sheet 2 of 8
Viewpoint 28 - Chowdene Bank
Viaduct Option (3 Span) Summer Year Of Opening

OS Reference : NZ 25410 58701
Direction of View: SOUTH
Distance to Scheme: 230m

Horizontal Field of View: 100°
Vertical Field of View: 39.6°
Camera: CANON EOS 5DS

Lens: Sigma 50mm f1.4 DG HSM | A (Canon)
Camera Height: 1.5m
Date & Time: 2/8/18 10:05

Not representative of scale and distance

Scale	Drawn	Eng. Check	Approved	Authorised
NTS	SW	AW	AW	NJA
Original Size	Date	Date	Date	Date
A3	APRIL 19	APRIL 19	APRIL 19	APRIL 19

Drawing Number
HE PIN: HE551462 | Originator: WSP | Volume: 6.2
ZZ | | | | PH | LE | 003
Section | Type | ID | Direction | Type | Role | Number

Revision: P02

PW Stage Code: Stage 3

Security Class

WSP Project Number: 70041947

P02	DEC 18	AMENDMENTS FOR GANTRIES	SW	AW	AW	NJA
P01	DEC 18	FIRST ISSUE	SW	AW	AW	NJA
Rev.	Date	Description	By	Eng' Chk	Disc' Chk	App'd

Suitability

Status

PINS Reference Number
TR010031

Client
highways england

Project Title
A1 Birtley to Coal House Scheme

Drawing Title
Figure 7.7.6 Sheet 3 of 8
Viewpoint 28 - Chowdene Bank
Viaduct Option (3 Span) Summer Design Year

OS Reference : NZ 25410 58701
Direction of View: SOUTH
Distance to Scheme: 230m

Horizontal Field of View: 100°
Vertical Field of View: 39.6°
Camera: CANON EOS 5DS

Lens: Sigma 50mm f1.4 DG HSM | A (Canon)
Camera Height: 1.5m
Date & Time: 2/8/18 10:05

Not representative of scale and distance

Scale	Drawn	Eng. Check	Approved	Authorised
NTS	SW	AW	AW	NJA
Original Size	Date	Date	Date	Date
A3	APRIL 19	APRIL 19	APRIL 19	APRIL 19

Drawing Number
HE PIN: HE551462 | Originator: WSP | Volume: 6.2
ZZ | PH | LE | 003
Section | Type | ID | Direction | Type | Role | Number

Revision: P02

PW Stage Code: Stage 3

Security Class

WSP Project Number: 70041947

OS Reference :	NZ 25410 58701	Horizontal Field of View:	40°	Lens:	Sigma 50mm f1.4 DG HSM | A (Canon)
Direction of View:	SOUTH	Vertical Field of View:	39.6°	Camera Height:	1.5m
Distance to Scheme:	230m	Camera:	CANON EOS 5DS	Date & Time:	2/8/18 10:05

View flat at comfortable arm's length. If viewing this image on a screen, enlarge to full screen height.

Figure 7.7.6 Sheet 4 of 8
Viewpoint 28 - Chowdene Bank
Viaduct Option (3 Span) Summer 40° Single Frame
HE551462-WSP-6.2-ZZ-PH-LE-003

Security Class

WSP Project Number: 70041947

Rev.	Date	Description	By	Eng' Ch'k	Disc' Ch'k	App'd
P02	DEC 18	AMENDMENTS FOR GANTRIES	SW	AW	AW	NJA
P01	DEC 18	FIRST ISSUE	SW	AW	AW	NJA

Suitability

Status

PINS Reference Number
TR010031

Client
highways england

Project Title
A1 Birtley to Coal House Scheme

Drawing Title
Figure 7.7.6 Sheet 5 of 8
Viewpoint 28 - Chowdene Bank
Winter Existing View

Scale	Drawn	Eng. Check	Approved	Authorised
NTS	SW	AW	AW	NJA
Original Size A3	Date APRIL 19	Date APRIL 19	Date APRIL 19	Date APRIL 19

Drawing Number
HE PIN: HE551462 | Originator: WSP | Volume: 6.2 | Revision: P02

ZZ | Section | Type | ID | Direction | PH | Type | LE | Role | 003 | Number | PW Stage Code: Stage 3

OS Reference :	NZ 25410 58701	Horizontal Field of View:	100°	Lens:	Sigma 50mm f1.4 DG HSM | A (Canon)
Direction of View:	SOUTH	Vertical Field of View:	39.6°	Camera Height:	1.5m
Distance to Scheme:	230m	Camera:	CANON EOS 5DS	Date & Time:	13/11/18 16:18

Not representative of scale and distance

Security Class

WSP Project Number: 70041947

OS Reference :	NZ 25410 58701	Horizontal Field of View:	100°	Lens:	Sigma 50mm f1.4 DG HSM | A (Canon)
Direction of View:	SOUTH	Vertical Field of View:	39.6°	Camera Height:	1.5m
Distance to Scheme:	230m	Camera:	CANON EOS 5DS	Date & Time:	13/11/18 16:18

Not representative of scale and distance

Rev.	Date	Description	By	Eng' Chk	Disc' Chk	App'd
P02	DEC 18	AMENDMENTS FOR GANTRIES	SW	AW	AW	NJA
P01	DEC 18	FIRST ISSUE	SW	AW	AW	NJA

Suitability

Status

PINS Reference Number: TR010031

Client: highways england

Project Title: A1 Birtley to Coal House Scheme

Drawing Title:
Figure 7.7.6 Sheet 6 of 8
Viewpoint 28 - Chowdene Bank
Viaduct Option (3 Span) Winter Year Of Opening

Scale	Drawn	Eng. Check	Approved	Authorised
NTS	SW	AW	AW	NJA
Original Size: A3	Date: APRIL 19	Date: APRIL 19	Date: APRIL 19	Date: APRIL 19

Drawing Number: HE PIN HE551462 | Originator: WSP | Volume: 6.2 | Revision: P02

Section: ZZ | Type | ID | Direction | Type: PH | Role: LE | Number: 003 | PW Stage Code: Stage 3

Security Class

WSP Project Number: 70041947

OS Reference :	NZ 25410 58701	Horizontal Field of View:	100°	Lens:	Sigma 50mm f1.4 DG HSM | A (Canon)	Not representative of scale and distance
Direction of View:	SOUTH	Vertical Field of View:	39.6°	Camera Height:	1.5m	
Distance to Scheme:	230m	Camera:	CANON EOS 5DS	Date & Time:	13/11/18 16:18	

Rev.	Date	Description	By	Eng' Chk	Des' Chk	App'd
P02	DEC 18	AMENDMENTS FOR GANTRIES	SW	AW	AW	NJA
P01	DEC 18	FIRST ISSUE	SW	AW	AW	NJA

Suitability

Status

PINS Reference Number
TR010031

Client
highways england

Project Title
A1 Birtley to Coal House Scheme

Drawing Title
Figure 7.7.6 Sheet 7 of 8
Viewpoint 28 - Chowdene Bank
Viaduct Option (3 Span) Winter Design Year

Scale	Drawn	Eng. Check	Approved	Authorised
NTS	SW	AW	AW	NJA
Original Size	**Date**	**Date**	**Date**	**Date**
A3	APRIL 19	APRIL 19	APRIL 19	APRIL 19

Drawing Number
HE PIN
HE551462

Originator
WSP

Volume
6.2

Revision
P02

ZZ | Section | Type | LB | Direction | PH Type | LE Role | 003 Number | PW Stage Code: Stage 3

Security Class

WSP Project Number: 70041947

OS Reference :	NZ 25410 58701	Horizontal Field of View:	40°	Lens:	Sigma 50mm f1.4 DG HSM | A (Canon)	View flat at comfortable arm's length. If viewing this image on a screen, enlarge to full screen height.	Figure 7.7.6 Sheet 8 of 8 Viewpoint 28 - Chowdene Bank Viaduct Option (3 Span) Winter 40° Single Frame HE551462-WSP-6.2-ZZ-PH-LE-003
Direction of View:	SOUTH	Vertical Field of View:	39.6°	Camera Height:	1.5m		
Distance to Scheme:	230m	Camera:	CANON EOS 5DS	Date & Time:	13/11/18 16:18		

Appendix E

RECORD OF ENVIRONMENTAL ACTIONS AND COMMITMENTS

1 INTRODUCTION

1.1.1. **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 Allerdene three span viaduct option. 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 and should be read in conjunction with the Outline CEMP.

Table 1-1 - Register of environmental actions and commitments

<table>
<tr><th>Ref</th><th>Action (including monitoring requirements)</th><th>Objective</th><th>Source Reference</th><th>Organisation / Individual Delivering Measure</th><th>Achievement criteria and reporting requirements</th><th>Project stage (Design, pre-construction, construction, operation)</th><th>Record of Completion
(Signature and date)</th></tr>
<tr><td colspan="8">Biodiversity</td></tr>
<tr><td>TSB1</td><td>Permanent loss of priority habitat areas will be avoided where possible. Similarly, where temporary land includes priority habitat areas then these areas will also be avoided, or the use of them minimised, where possible.
Not less than the following habitats will be created for the Scheme:
<table>
<tr><th>JNCC Phase I Habitat Type[1]</th><th>Compensation Area (hectares/metres)

Allerdene three span viaduct option</th></tr>
<tr><td>Broad-leaved woodland - semi-natural – A1.1.1</td><td>13.94ha</td></tr>
<tr><td>Species rich grassland</td><td>7.12ha</td></tr>
<tr><td>Native Species hedgerow.</td><td>3,791 m</td></tr>
<tr><td>Hedgerow with trees – species poor – J2.3.2</td><td>407 m</td></tr>
<tr><td>G2 Running water -G2</td><td>505 m</td></tr>
</table></td><td>To avoid permanent loss and reduce temporary loss of priority habitat areas and suitable GCN terrestrial habitat.</td><td>ES Paragraph 8.9.3
ES Table 8-17</td><td>Designer
Main contractor</td><td>Landscape design approved by the SoS following consultation with the local authority.
Reported on the Requirements Register published on Highways England’s Scheme website.</td><td>Design
Construction</td><td></td></tr>
</table>

[1] JNCC (2011). UK Biodiversity Action Plan Priority Habitat Descriptions. Available at: http://jncc.defra.gov.uk/PDF/UKBAP_PriorityHabitatDesc-Rev2011.pdf

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If you have any enquiries about this document A1BirtleytoCoalhouse@highwaysengland.co.uk or call 0300 470 4580*.

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