

A1 Birtley to Coal House

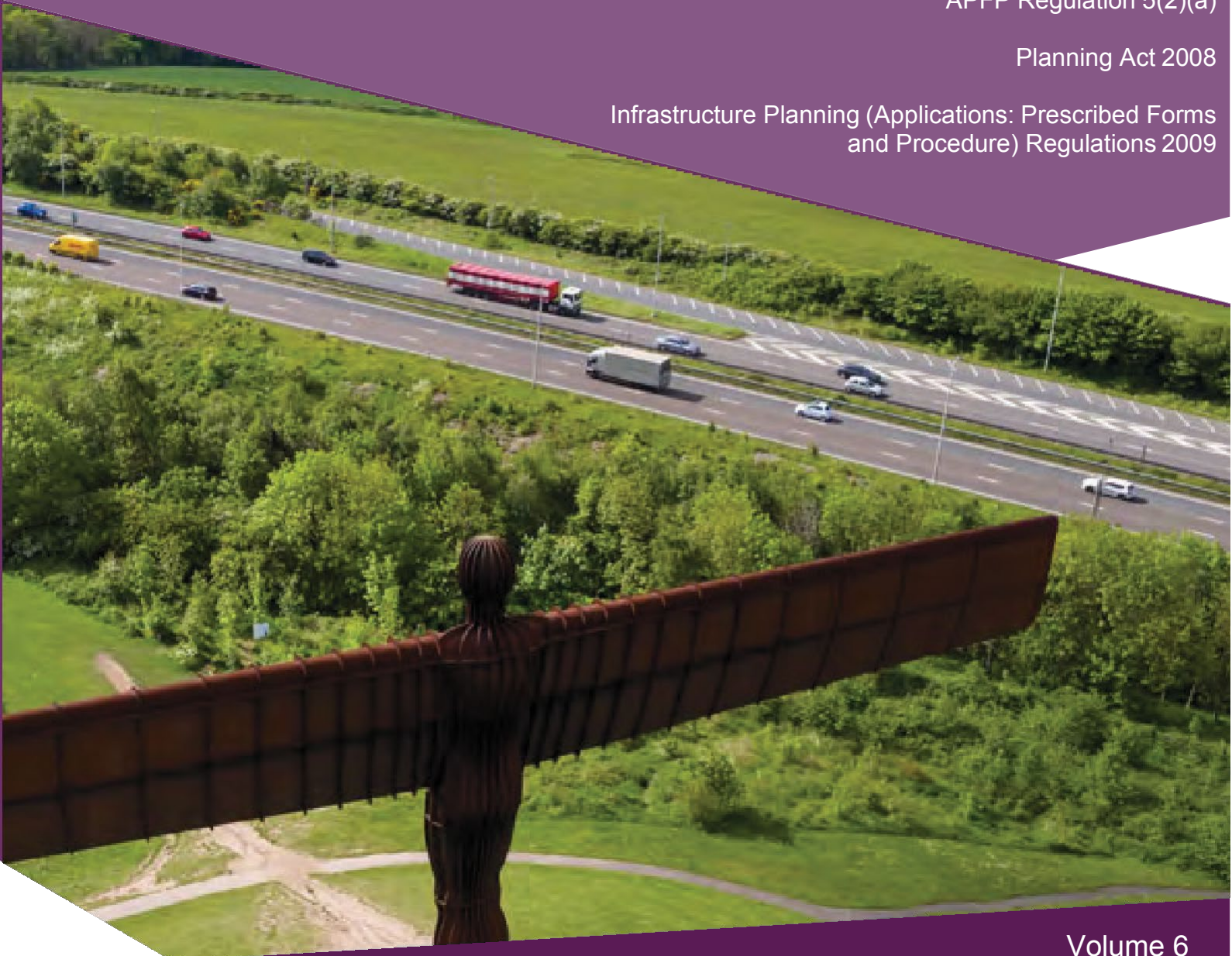
Scheme Number: TR010031

6.1 Environmental Statement Chapter 7 Landscape and Visual

APFP Regulation 5(2)(a)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms
and Procedure) Regulations 2009



Infrastructure Planning

Planning Act 2008

**The Infrastructure Planning
(Applications: Prescribed Forms and
Procedures) Regulations 2009**

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

Environmental Statement

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CONTENTS

7	LANDSCAPE AND VISUAL	1
7.1	INTRODUCTION	1
7.2	COMPETENT EXPERT EVIDENCE	1
7.3	LEGISLATIVE AND POLICY FRAMEWORK	2
7.4	ASSESSMENT METHODOLOGY	9
7.5	ASSESSMENT ASSUMPTIONS AND LIMITATIONS	23
7.6	STUDY AREA	24
7.7	BASELINE CONDITIONS	25
7.8	POTENTIAL IMPACTS	35
7.9	DESIGN, MITIGATION AND ENHANCEMENT MEASURES	45
7.10	ASSESSMENT OF LIKELY SIGNIFICANT EFFECTS	48
7.11	MONITORING	70
	REFERENCES	72

TABLES

Table 7-1 - Landscape and visual professional competence	2
Table 7-2 - Relevant national planning policy	3
Table 7-3 - Relevant local planning policy	7
Table 7-4 - Landscape quality criteria	11
Table 7-5 - Landscape sensitivity	12
Table 7-6 - Landscape magnitude of impact	13
Table 7-7 - Visual receptor sensitivity to change criteria	17
Table 7-8 - Visual magnitude of impact rating	18

Table 7-9 - Significance of landscape effects matrix	19
Table 7-10 - Significance of landscape effects	19
Table 7-11 - Significance of visual effects matrix	21
Table 7-12 - Visual significance of effects rating	22
Table 7-13 – Significant landscape character effects	58
Table 7-14 - Significant visual effects during construction	61
Table 7-15 - Significant visual effects during winter year of opening	66
Table 7-16 - Significant visual effects during summer of design year	69

7 LANDSCAPE AND VISUAL

7.1 INTRODUCTION

- 7.1.1. This chapter reports the outcome of the landscape and visual assessment of the Scheme. This assessment has been carried out following the methodology set out in Interim Advice Note (IAN) 135/10 (**Ref 7.1**) that supersedes Design Manual for Roads and Bridges (DMRB) guidance Volume 11, Section 3, Part 5 (**Ref 7.2**). This chapter summarises the legislative and policy framework and describes the methodology followed for the assessment along with the assessment assumptions and limitations. The chapter identifies the potential impacts as a result of the Scheme, details the design, mitigation and enhancement measures that have been identified and reports the assessment of the significant effects of the Scheme. Details of monitoring that should be carried out for the Scheme are also provided. This chapter is intended to be read as part of the wider Environmental Statement (ES) and in conjunction with its associated figures and appendices.
- 7.1.2. A full description of the Scheme is provided in **Chapter 2 The Scheme** of this ES (**Application Document Reference: TR010031/APP/6.1**).

Allerdene Bridge Options

- 7.1.3. Two design options are currently under consideration for Allerdene Bridge: Allerdene embankment option and Allerdene viaduct option. The assessment of likely significant environmental effects, and design mitigation and enhancement measures should be considered to be the same for each option unless they are identified separately.
- 7.1.4. In the landscape and visual assessment, the differences between Allerdene embankment option and Allerdene viaduct option, as detailed in **paragraphs 2.7.11 to 2.7.18** of this ES, do affect the assessment. This is because of the longer construction phase associated with the Allerdene viaduct option. For the purposes of the landscape and visual assessment, the two options have been assessed and where differences in the assessment of effects exist these have been identified.

7.2 COMPETENT EXPERT EVIDENCE

- 7.2.1. As detailed below, **Table 7-1** demonstrates that the professionals contributing to the production of this ES chapter have sufficient expertise to ensure the completeness and quality of this ES.

Table 7-1 - Landscape and visual professional competence

Name	Role	Qualifications and Professional Membership	Experience
Sarah Wilson	Author	BA (Hons) Landscape Architecture PgDip (Landscape Architecture) CMLI	Three years' experience preparing ES, landscape and visual appraisal and assessment for highways schemes including: <ul style="list-style-type: none"> – A338 Wessex Fields Junction Improvement (statutory Environmental Impact Assessment (EIA)) – A595 Moresby Permanent Diversion (non-statutory EIA) – M1 Smart Motorway (non-statutory EIA)
Andrew Williams	Reviewer	BA (Hons) Landscape Architecture Grad Dip (Landscape Architecture) CMLI	24 years' experience preparing landscape and visual impact assessments for numerous highways schemes including: <ul style="list-style-type: none"> – A9 Dualling Tomatin to Moy (statutory EIA) – Oxon Link Road (statutory EIA) – East Leeds Orbital Road (statutory EIA)

7.3 LEGISLATIVE AND POLICY FRAMEWORK

7.3.1. The following guidelines, legislation and planning policy documents provide the framework for the protection and conservation of landscape within the Study Area.

LEGISLATION

National

Countryside and Rights of Way Act 2000 (Ref 7.3)

7.3.2. The Act contains measures to improve public access to the open countryside and registered common land while recognising the legitimate interests of those who own and manage the land concerned; it amends the law relating to rights of way and amends the law relating to nature conservation by strengthening protection for Sites of Special Scientific Interest. The Act also provides for access (and limitations to access) for the general public and statutory undertakers.

Town and Country Planning Act 1990 (Ref 7.4)

- 7.3.3. The Act set up vehicles for environmental protection and recreation. It also established Tree Preservation Orders (TPOs), including trees in Conservation Areas (CAs).

POLICY

National

- 7.3.4. National policy relevant to the potential effects on landscape and visual receptors is outlined in **Table 7-2**.

Table 7-2 - Relevant national planning policy

Policy	Relevant Policy Objectives	Significance of impact of the Scheme on policy objective
National Policy Statement for National Networks (Ref 7.5)	<p>National Policy Statement for National Networks (NPS NN) (2014) sets out the need for, and Government's policies to deliver nationally significant infrastructure projects on the national road and rail networks in England. It states that projects need to be designed carefully and take into account the potential impacts on the landscape. Also, to have regard to siting, operational and other relevant constraints with the aim to avoid or minimise damage to the landscape, providing reasonable mitigation where possible.</p> <p>NPSNN paragraph 5.160 states:</p> <p><i>'Adverse landscape and visual effects to be minimised through the appropriate siting of infrastructure, design (including choice of materials) and landscaping schemes, depending on the size and type of proposed project. Materials and designs for infrastructure should always be given careful consideration.'</i></p>	<p>The Scheme design process has sought to avoid significant effects and identify appropriate measures to mitigate potentially significant impacts where they arise, such as maintaining slope profiles of an appropriate gradient to plant screening vegetation. A mitigation strategy has been developed that identifies where existing vegetation is to be removed and where new planting will be created, refer to Figure 7.6 Landscape Mitigation Design of this ES (Application Document Reference: TR010031/APP/6.2).</p>
National Planning Policy Framework (2019) (Ref 7.6)	National Planning Policy Framework (NPPF), paragraph 170 requires the planning system	The existing landscape has low levels of tranquillity due to the proximity of the Gateshead

Policy	Relevant Policy Objectives	Significance of impact of the Scheme on policy objective
	<p>to protect and enhance valued landscapes. National Planning Policy Framework paragraph 180 notes the importance of tranquillity and requires that planning policies and decisions aim to <i>“identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason”</i>.</p>	<p>and Newcastle conurbation and is heavily influenced by the A1. The Scheme is not expected to adversely impact on the existing low levels of tranquillity.</p>
<p>National Planning Policy Framework (2019) (Ref 7.6)</p>	<p>NPPF paragraph 172 refers to valued landscapes and in particular those protected by designations such as those within National Parks and AONB. It recognises landscape as being an important part of sustainable development and in particular its environmental role as a contributing factor in understanding the natural, built and historic environment. It attaches great importance to the design of the built environment and the need for good design which should contribute positively to making better places for people.</p>	<p>There are no landscape designations within the Study Area, however the Study Area has amenity value associated with it due to the presence of accessible rural land adjacent to the Gateshead and Newcastle conurbation, and forming the context to the Angel of the North. The Scheme is not expected to adversely impact on these locally valued qualities. The Scheme design has been developed to reduce impacts on landscape and develop mitigation and enhancement measures, such as avoiding unnecessary clearance of screening vegetation during construction and then interplanting to reinforce existing and retained screening.</p>
<p>National Planning Policy Framework (2019) (Ref 7.6)</p>	<p>Section 13 of the NPPF highlights the importance of Green Belt and the need to prevent urban sprawl through the preservation of the openness.</p>	<p>The Scheme lies on the boundary to or within land designated as Green Belt, however, with the exception of the realignment of the A1 to accommodate the Allerdene</p>

Policy	Relevant Policy Objectives	Significance of impact of the Scheme on policy objective
		<p>Bridge over the East Coast Main Line (ECML), the Scheme is largely contained within the context of the existing A1 corridor that is an established feature within the Green Belt. As a result, significant harm on the sense of openness is substantially avoided, except where the scheme deviates from its existing alignment to cross the ECML on a new structure. Where local impacts would arise, these would be due to the loss of perceived openness arising from the encroachment of the new Allerdene Bridge, whether as a bridge and embankment or as a viaduct. Measures, including woodland planting, would contribute to screening the corridor and reduce the impacts on the sense of openness.</p> <p>For further discussion on wider Green Belt matters refer to the Planning Statement (Application Document Reference: TR010031/APP/7.1).</p>
<p>Highways England Road Investment Strategy (Ref 7.7)</p>	<p>The Road Investment Strategy (RIS) (Ref 7.7) aims to mitigate existing landscape problems on the network, particularly in protected areas, as well as enhancing the landscape quality through new schemes.</p>	<p>The Scheme includes measures to improve the availability of views to and from the Angel of the North. Planting proposals would be appropriate to the location and comprise native species, improving the species diversity, improving the structure and quality of woodland within the corridor.</p>

Policy	Relevant Policy Objectives	Significance of impact of the Scheme on policy objective
Highways England Delivery Plan 2015-2020 (Ref 7.8)	The Plan sets out in detail how Highways England will deliver its strategic outcomes and measure success. It will invest to improve the look of the network as well as protecting and enhancing the character and quality of the built and natural landscape. It will also continue to develop a programme of interventions to reduce visual impacts.	The Scheme design process has sought, where possible, to avoid significant effects and identify appropriate measures to mitigate potentially significant impacts where they arise.

Local

- 7.3.5. Local policy relevant to the potential effects on landscape and visual is outlined in **Table 7-3**.

Table 7-3 - Relevant local planning policy

Policy	Relevant Policy Objectives	Significance of impact of the Scheme on policy objective
<p>Core Strategy and Urban Core Plan for Gateshead and Newcastle 2010-2030 (Ref 7.9)</p>	<p>Policy CS18 Green Infrastructure and the Natural Environment.</p> <p>A high quality and comprehensive framework of interconnected green infrastructure that offers ease of movement and an appealing natural environment for people and wildlife will be achieved by:</p> <ol style="list-style-type: none"> 1. Maintaining, protecting and enhancing the integrity, connectivity, multifunctionality and accessibility of the Strategic Green Infrastructure Network. 2. Protection, enhancement and management of green infrastructure assets which include: i. Biodiversity and geodiversity assets, including designated sites, designated wildlife corridors and priority habitats and species, ii. Distinctive landscape character, recognising the particular importance of our rivers and topography, and iii. Trees, woodland and hedgerows. 3. Addressing gaps in the network and making improvements in Opportunity Areas. 4. Improving and extending linkages to and within the Strategic Green Infrastructure Network. 5. Protecting and enhancing open spaces, sport and recreational facilities in accordance with agreed standards in line with National Policy. 6. Improving access to, along and onto the River Tyne and tributaries, without adversely impacting on the local ecology or damaging the river banks. 	<p>By extending the footprint of the A1 and the formation of the new Allerdene Bridge over the ECML to the south of the existing bridge, the Scheme would impact on areas identified as forming part of the 'Strategic Green Infrastructure Network' and an 'Opportunity Area'.</p> <p>Mitigation measures would seek to mitigate this in part through additional woodland, areas of shrubs and species rich grassland, and where appropriate to increase woodland cover. The result of this would be that the existing visual connectivity of the landscape features would be maintained, wildlife corridors extended, woodland and hedgerow habitats improved and/or extended, along with opportunities for improvements for inter-visibility with the rural landscape and the Angel of the North.</p>
	<p>Policy CS19 Green Belt</p> <p>The Tyne and Wear Green Belt forms a wide band of protected land around Gateshead and Newcastle. The Green Belt as shown on the Policies Maps will be protected in accordance with national policy to:</p> <ol style="list-style-type: none"> 1. Prevent the merging of settlements, particularly: Gateshead with Hebburn, Washington, Birtley or Whickham; Newcastle with Ponteland, or Cramlington; the main built-up area with nearby villages; and villages with each other. 2. Safeguard the countryside from encroachment. 3. Check unrestricted urban sprawl. 	<p>The sense of openness is currently interrupted by the existing A1 corridor and ECML. The Scheme would impact on the extent of the Green Belt where the alignment of the A1 would be modified, particularly where it is extended to the south as a result of the replacement of Allerdene Bridge over the ECML.</p> <p>At the narrowest point, where the Green Belt is approximately 1km wide between Gateshead and Birtley, the changes would occur largely within the confines of the existing A1 corridor, and impacts on the perception of the extent and nature of the countryside that makes up the Green Belt would not substantially modify the features that currently exist.</p>
<p>Gateshead Unitary Development Plan (Saved 2010) (Ref 7.10)</p>	<p>ENV3 Character and Design</p> <p>Design, density and scale of new development should make a positive contribution to the established character and identity of its locality. All development will be expected to recognise established design principles with regard to such factors as scale, massing, height, materials, density, legibility, views and vistas. The relationship between buildings and the spaces around and between them must be handled in a sensitive manner.</p> <p>ENV7 Development within Conservation Areas</p>	<p>The Scheme design is reflective of the adjacent landform and includes appropriate measures to mitigate potentially harmful effects on views associated with the Scheme. These are set out in Section 7.9 below and on Figure 7.6 Landscape Mitigation Design of this ES (Application Document Reference: TR010031/APP/6.2)</p> <p>The Scheme would give rise to a perceptible change in the views from Lamesley CA to the south-west of Allerdene embankment option, although</p>

Policy	Relevant Policy Objectives	Significance of impact of the Scheme on policy objective
	<p>ENV7 Development within CAs must preserve or enhance the area's special architectural or historic character or appearance by:</p> <ul style="list-style-type: none"> a) Respecting its architectural and historical context particularly in terms of design, massing, height, silhouette, grain, proportion, rhythm, street alignment, plot layout and associated landscaping. b) Ensuring that wherever practicable and appropriate, traditional natural local materials which contribute to the area's character or appearance are used and incongruous materials are avoided. c) Ensuring that traditional or important features both on buildings and contributing to their setting should be retained – where features have deteriorated to the extent that they have to be replaced, the replacement should match the original in design, materials and construction methods. d) Protecting trees, hedgerows, landscape features, open areas and views and vistas, within and out of the CA, which contribute to its character and appearance; and e) Not generating traffic movements, parking demands, noise or other environmental impacts that would be prejudicial to the area's character and appearance. 	<p>this is not expected to be significant. The design of the bridge is comparable to the existing bridge form, and the embankment slopes provide opportunities for appropriate measures in the form of woodland planting to mitigate some potentially harmful effects on the perception of the landscape associated with the CA. The Allerdene viaduct option would be equal in height to the existing bridge structure, although would extend over a wider area as a result of the viaduct support piers. Allerdene viaduct option would allow for an awareness of the landscape beyond the realigned A1 corridor.</p> <p>Views and vistas from within the Chowdene and Birtley CAs are constrained by a combination of landform and built form.</p> <p>Ravensworth CA is largely screened from the Scheme by extensive woodland on a gently rising landform.</p> <p>Potential impacts on traffic movements have been considered within the Transport Assessment Report (Application Document Reference: TR010031/7.2). Potential noise impacts are outlined in Chapter 11 Noise and Vibration of this ES (Application Document Reference: TR010031/APP/6.1). However, in the context of the existing A1 it is not anticipated that as a result of the Scheme there would be a substantial change in the perception of landscape character.</p>
	<p>ENV44 Woodland, Trees and Hedgerows</p> <p>Works that will damage or lead to the loss of trees which contribute to the amenity of an area, or which enhance the character and/or appearance of a CA, or have a significant wildlife interest, will not normally be permitted. Healthy trees which contribute to the character of an area and which are under threat will be protected by means of Tree Preservation Orders or conditions attached to planning permissions.</p> <p>Proposals for works to trees will be considered on the basis of the following criteria:</p> <ul style="list-style-type: none"> a) The condition of the trees. b) The contribution of the trees to the local landscape and/or character of an area. c) The nature conservation value of the trees, woodland or hedgerows. d) The impact that the trees have on existing structures and the amenity value enjoyed by individual occupiers. e) The extent and content of replanting proposals. f) The extent and impact of the works. 	<p>The Scheme will require the removal of an extensive tract of roadside woodland in order to allow for its construction and operation as shown on Figure 7.6 Landscape Mitigation Design of this ES (Application Document Reference: TR010031/APP/6.2). However, the proposed mitigation strategy would seek to replace or restore the existing landscape framework of hedgerows, woodland and areas of scrub, removed as a result of the construction of the Scheme. Where feasible, existing healthy trees would be retained and protected according to their tree root protection area (as defined in BS5387: Trees in relation to design, demolition and construction) to avoid unnecessary removal.</p>

7.4 ASSESSMENT METHODOLOGY

SCOPE OF ASSESSMENT

- 7.4.1. The Landscape and Visual Impact Assessment (LVIA) considers the two related topics of:
- a. Landscapes: An important component of the distinctiveness of any local area; they take their character from a combination of elements, including landform, land use and pattern, land cover/vegetation, open space and cultural heritage influences.
 - b. Visual amenity: A view, its components and context can have a great effect on the quality of people's lives.
- 7.4.2. The temporal scope of the assessment is based on the following assumed timescales:
- a. 2018 is the baseline year.
 - b. 2023 will be the opening year when the Scheme is in operation.
 - c. 2038 will be the design year (Year 15 following commencement of operation).

METHODOLOGY

- 7.4.3. A detailed assessment has been undertaken for landscape character and visual amenity, as defined by IAN 135/10 (**Ref 7.1**) that supersedes DMRB guidance Volume 11, Section 3, Part 5 (**Ref 7.2**), supported and updated as appropriate by Guidelines for Landscape and Visual Impact Assessment (GLVIA3) (**Ref 7.11**). GLVIA places greater emphasis on professional judgement in the explanation and justification for assessment criteria and conclusions, appropriate to the Scheme being assessed. Where information has been used from GLVIA3 this has been identified within the relevant section.
- 7.4.4. There are four key stages when carrying out assessments on the effects of landscape character and visual amenity. These are listed below:
- a. Assessment of the existing situation (environmental baseline), analysing and judging the sensitivity of the existing landscape and visual context of the receiving environment, within the defined Study Area:
 - i. Detailed desk study and fieldwork to identify the character of the landscape, including its condition and value, and the nature and sensitivity of the visual receptors that may be affected by the Scheme.
 - ii. Review of relevant planning policies.
 - iii. Review of adopted landscape character areas.
 - iv. Define the Zone of Visual Influence (ZVI) and visual receptors.
 - b. Identify potential impacts associated with the Scheme, including measures within the design as embedded mitigation, during all stages of development (construction, operational phases), assigning a magnitude of impact to identified changes associated to their respective subject heading; landscape character and visual amenity.
 - c. Identify mitigation and develop a detailed landscape strategy where the assessment identifies potentially significant effects appropriate to the Scheme, and the views of the receiving local area.

- d. Describe residual impacts i.e. incorporating mitigation and their associated significance of effect, resulting from the Scheme.

Assessment of Landscape Character Effects

- 7.4.5. Landscape effects describe the likely nature and scale of changes (impacts) imposed on a geographical area's character by the Scheme. Impacts can be either direct or indirect. The sensitivity, defined through quality and value, of a landscape will determine the nature of the change, while the magnitude of the impact relates to the scale of these changes.
- 7.4.6. The term landscape applies equally to natural, rural, urban and peri-urban areas. It concerns landscapes that might be considered outstanding as well as every day or degraded landscapes.
- 7.4.7. Landscape sensitivity is derived from the combination of a landscape's quality, value and the degree to which the particular element or characteristic can be replaced or substituted. The determination of the sensitivity of the landscape resource is based upon an evaluation of a landscapes' key characteristic likely to be affected.
- 7.4.8. The significance of effect is then determined by assessing the sensitivity of the landscape, against the magnitude of impact arising from the project.
- 7.4.9. Over time, views within the landscape change, due to seasonal variation, changes in light level, human intervention and variation between night and day. With respect of this, when considering the impacts of the Scheme (magnitude of change) upon the perception of landscape character, the following scenarios have been assessed in accordance with IAN 135/10 (**Ref 7.1**):
 - a. Construction Phase – During the construction period, assuming a maximum perceived change situation (i.e. when construction activity is at its peak) and noting how long that period is likely to last.
 - b. Winter (year of opening) – A winter's day in the year that the project would open to traffic or be fully operational (i.e. with noise/visual screens and mounds in place but before any planted mitigation has begun to take effect).
 - c. Summer (design year) – A summer's day in the fifteenth year after opening (i.e. when the planted mitigation measures can be assumed to be substantially effective). This is usually a reflection of the near fully mitigated scenario under normal conditions.

Landscape Quality

- 7.4.10. Landscape quality relates to the intrinsic aesthetic appeal demonstrated by a character area or features within the Study Area including its condition and contribution to defining an area's 'sense of place'.
- 7.4.11. A five point scale (**Table 7-4** below) has been developed through professional judgement and adopted to assist in describing landscape quality, prior to and post development. This landscape quality criteria is set out in **Table 7-4** below.

Table 7-4 - Landscape quality criteria

Rating	Criteria
Outstanding	Areas comprising a clear composition of valued landscape components in robust form and health, free of disruptive visual detractors and with a strong sense of place. Areas containing a strong, balanced structure with distinct features worthy of conservation.
Very Attractive	Areas primarily of valued landscape components combined in an aesthetically pleasing composition and lacking prominent disruptive visual detractors. Areas containing a strong structure with noteworthy features or elements, exhibiting a sense of place.
Good	Areas primarily of valued landscape components combined in an aesthetically pleasing composition with low levels of disruptive visual detractors, exhibiting a recognisable landscape structure.
Ordinary	Areas containing some features of landscape value but lacking a coherent and aesthetically pleasing composition with frequent detracting visual elements, exhibiting a distinguishable structure often concealed by mixed land uses or development. Such areas will be commonplace at the local level and will generally be undesignated, offering scope for improvement.
Poor	Areas lacking valued landscape components or comprising degraded, disturbed or derelict features, lacking any aesthetically pleasing composition with a dominance of visually detracting elements, exhibiting mixed land uses which conceal the baseline structure. Such areas will generally be restricted to the local level and identified as requiring recovery.

Landscape Value

7.4.12. Landscape value relates to areas of particular scenic quality or those displaying important historic and cultural associations. Landscape value is frequently addressed by reference to international, national, regional and local designations. An absence of a formal designation does not, however, determine that an area is necessarily of low value; factors such as accessibility and local scarcity can render areas of unremarkable quality highly valuable as a local resource.

Susceptibility to Change

7.4.13. There is a further consideration when determining sensitivity, which is susceptibility to change. A high quality or high value landscape should not, by definition, imply that it has a high susceptibility to future change. Similarly, an area expressing low quality or value does not automatically have a lower susceptibility to change. Susceptibility has been defined in GLVIA (Ref 7.11) paragraph 5.40 as, “*The ability of the landscape receptor to*

accommodate the proposed development without undue consequences for the maintenance of the baseline situation and/or the achievement of landscape policies and strategies”.

Susceptibility to change is therefore likely to reflect the type and nature of the proposed changes.

- 7.4.14. Susceptibility to change has been described within a three point scale of high – medium – low and forms an intrinsic part of the assessment of sensitivity as outlined below. The sensitivity, based on quality value and susceptibility, along with the magnitude of impact arising as a result of a proposed development are used in determining significance of effects.

Sensitivity to Change

- 7.4.15. Sensitivity to change relates to an area’s quality, value and the extent to which it is considered capable of accepting the type of development proposed. Three orders of sensitivity have been adopted and are outlined below in **Table 7-5** which is taken from IAN 135/10, Annex 1, Table 2 (**Ref 7.1**).

Table 7-5 - Landscape sensitivity

Rating	Criteria
High	<p><i>Landscapes which by nature of their character would be unable to accommodate change of the type proposed. Typically, these would be:</i></p> <p>Of high quality (very attractive or outstanding) with distinctive elements and features making a positive contribution to character and sense of place.</p> <p>Likely to be designated, but the aspects which underpin such value may also be present outside designated areas, especially at the local scale.</p> <p>Areas of special recognised value through use, perception or historic and cultural associations.</p> <p>Likely to contain features and elements that are rare and could not be replaced.</p>
Moderate	<p><i>Landscapes which by nature of their character would be able to partly accommodate change of the type proposed. Typically, these would be;</i></p> <p>Comprised of commonplace elements and features creating generally unremarkable character but with some sense of place (good quality).</p> <p>Locally designated, or their value may be expressed through non-statutory local publications.</p> <p>Containing some features of value through use, perception or historic and cultural associations.</p> <p>Likely to contain some features and elements that could not be replaced.</p>

<i>Low</i>	<p><i>Landscapes which by nature of their character would be able to accommodate change of the type proposed. Typically, these would be;</i></p> <p>Comprised of some features and elements that are discordant, derelict or in decline, resulting in indistinct character with little or no sense of place (ordinary or poor quality).</p> <p>Not designated.</p> <p>Containing few, if any, features of value through use, perception or historic and cultural associations.</p> <p>Likely to contain few, if any, features and elements that could not be replaced.</p>
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Magnitude of Impact

7.4.16. The magnitude of impact is determined through a process of quantification, such as loss of and severance or modification to key landscape components (woodland, hedgerows, boundaries landform and culturally significant structures) and evaluation of the extent to which the Scheme will emerge as a new component in the landscape setting or change the balance between components that currently constitute baseline character. Magnitude of impact can be either adverse or beneficial. Definitions associated with the magnitude of impact are outlined below in **Table 7-6** which is taken from IAN 135/10, Annex 1, Table 1 (**Ref 7.1**).

Table 7-6 - Landscape magnitude of impact

Rating	Criteria
Major	<p>Total loss or large-scale damage to existing character or distinctive features and elements, and/or the addition of new but uncharacteristic conspicuous features and elements,</p> <p>or</p> <p>Large scale improvement of character by the restoration of features and elements, and/or the removal of uncharacteristic and conspicuous features and elements, or by the addition of new distinctive features.</p>
Moderate	<p>Partial loss or noticeable damage to existing character or distinctive features and elements, and/or the addition of new but uncharacteristic noticeable features and elements,</p> <p>or</p> <p>Partial or noticeable improvement of character by the restoration of existing features and elements and/or the removal of uncharacteristic and noticeable features and elements, or by the addition of new characteristic features.</p>

Rating	Criteria
Minor	Slight loss or damage to existing character or feature and elements, and/or the addition of new but uncharacteristic features and elements, or Slight improvement of character by the restoration of existing features and elements, and/or the removal of uncharacteristic features and elements, or by the addition of new characteristic elements.
Negligible	Where the development would appear as a barely perceptible component in the landscape and result in very minor alteration to the existing balance of components in the baseline context.
No Change	Where the development would have no effect on the components in the landscape resulting in no alteration to the existing balance of components in the baseline context. No noticeable loss, damage or alteration to character or features or elements.

Assessment of Visual Effects

- 7.4.17. Visual effects are changes in the composition and character of views available in the area affected by the Scheme. Visual impact appraisal considers the response of the people who experience these effects, who may be living or working in the area, enjoying recreational activities or simply passing through. The assessment considers the overall consequence of the effects on the visual amenity - the pleasantness of the view or outlook – that the people affected enjoy.
- 7.4.18. Visual effects relate to changes in available views and how this is perceived by receptors. Changes include:
- a. The direct effects of the Scheme on the content and character of view.
 - b. The overall effect on the change to visual amenity.
- 7.4.19. The evaluation of the significance of the visual effects of the Scheme is derived by assessing the sensitivity of the receptor against the magnitude of impact on the view.
- 7.4.20. Over time, views within the landscape change, due to seasonal variation, changes in light level, human intervention and variation between night and day. With respect of this, when considering the impacts of the Scheme (magnitude of impact) upon the respective views the following scenarios will be assessed, in accordance with IAN 135/10 (**Ref 7.1**).
- a. Construction Phase – During the construction period, assuming a maximum perceived change situation (i.e. when construction activity is at its peak for any given view) and noting how long that period is likely to last.

- b.** Year of opening (winter) – A winter’s day in the year that the project would open to traffic or be fully operational (i.e. with noise/visual screens and mounds in place but before any planted mitigation has begun to take effect).
- c.** Design year (summer) – A summer’s day in the fifteenth year after opening (i.e. when the planted mitigation measures can be assumed to be substantially effective). This is usually a reflection of the near fully mitigated scenario under normal conditions.

- 7.4.21. The analysis assumes that the visual context applicable at the year of opening is that which would be experienced during winter months when the degree of visual exposure is potentially greatest due to a lack of foliage within the wider landscape and before the establishment of mitigation planting. The analysis at fifteen years into operation demonstrates the effectiveness following maturation of any landscape and mitigation proposals for the Scheme. The analysis relates to each key viewpoint and concludes with an evaluation of the significance of impact related to each viewpoint.
- 7.4.22. The following methodology has been developed in line with current best practice guidance in order to best describe the impacts imposed by the Scheme upon the visual amenity of the assessment area.

Zone of Visual Influence

- 7.4.23. The ZVI represents the extent of the area within which there would be potential for views of the Scheme.

Viewpoint Locations

- 7.4.24. Viewpoints are selected to represent the nature and type of visual amenity from a given area or direction of view. It is not offered as the ‘only view’ but is used to inform a greater understanding of the extent of visibility and the nature of change. By definition of the ZVI, significant views beyond its extent should not be possible, given the nature, location and scale of the Scheme.
- 7.4.25. Viewpoints will be selected for a range of receptor types, including residential properties, designated areas (i.e. CAs), public footpaths and road users recorded within the ZVI.
- 7.4.26. GLVIA (**Ref 7.11**) recognises three types of viewpoint:
- a.** Representative - selected to represent the experience of different types of visual receptor, where large numbers of viewpoints cannot all be included individually and where significant effects are unlikely to differ – for example, certain points may be chosen to represent the views of users of particular public footpaths and bridleways.
 - b.** Specific - chosen because these are key and sometimes promoted viewpoints within the landscape, including, for example, specific local visitor attractions, viewpoints in areas of particularly noteworthy visual and/or recreational amenity such as landscapes with statutory landscape designations, or viewpoints with particular cultural landscape associations.
 - c.** Illustrative - chosen specifically to demonstrate a particular effect or specific issues, which might, for example, be the restricted visibility at certain locations.

- 7.4.27. The frequency, range and duration of the view, may however, vary. In many cases the viewpoints selected are representative of more than one type of receptor. These elements will vary depending on whether the receptor is representative of residents, drivers or cyclists on local roads.
- 7.4.28. Visual effect schedules have been prepared for receptors with a view of the Scheme, the typical view being demonstrated within representative viewpoints (representing residential properties, community facilities, commercial properties, rights of ways). These representative viewpoints have been agreed with Gateshead Council and Sunderland City Council. The findings of the detailed visual receptor assessments against the agreed representative locations have been presented in standalone Visual Effects Drawings (VED), refer to **Figure 7.4 Visual Effects Drawing** of this ES (**Application Document Reference: TR010031/APP/6.2**).
- 7.4.29. Where required and where they will inform the assessment, accompanying photography is presented following industry best practice guidance including: The Landscape Institute's, Technical Guidance Note 02/17 Visual Representation of Development Proposals (March 2017) (**Ref 7.12**); and the Landscape Institute, Advice Note 1/11 Advice on Photography and Photomontage (amended 2013) (**Ref 7.13**) which is currently undergoing further review.

Analysis of Visual Effects

- 7.4.30. In establishing the likely visual effects, the sensitivity to change of the receptor or associated viewpoint will be evaluated against the magnitude of the impact. Criteria to establish sensitivity to change and magnitude of impact will be outlined in the subsequent paragraphs, along with **significance** of effect ratings.

Sensitivity to Change

- 7.4.31. The sensitivity of a visual receptor reflects their susceptibility to change and any values which may be associated with the specific view. This in turn is dependent upon a number of factors including the viewer's activity, their reasons for being there, and their expectations and the duration of view. This has been qualified from the suggested sensitivity ratings provided in IAN 135/10, Annex 2, Assessment of Visual Effects, Table 1 as it is considered that this provides for greater refinement using professional judgement.
- 7.4.32. Certain views are highly valued for either their cultural or historical associations, which can increase the sensitivity of the viewer. However, while a valued view may serve to increase the overall visual receptor sensitivity, a low value will not necessarily reduce sensitivity.
- 7.4.33. Least sensitive receptors are considered, for example, to be people engaged in work whose primary focus would not necessarily be on the surrounding landscape views. Conversely, more emphasis is placed upon receptors whose change in view or visual amenity is either the prime focus, or potentially covers a wider area.
- 7.4.34. Within this assessment, sensitivity to change is ranked as set out in **Table 7-7**.

7.4.35. The proposed sensitivity criteria deviate from that presented within IAN 135/10 (**Ref 7.1**) and is in line with guidance presented within GLVIA (**Ref 7.11**). GLVIA supersedes that noted within IAN 135/10 given its date of publication. The criteria in **Table 7-7** is felt to better reflect the existing situation and the nature and scale of the Scheme.

Table 7-7 - Visual receptor sensitivity to change criteria

Rating	Criteria
High sensitivity	<p>Residents at home (views from principal aspects) even where the actual view enjoyed may not be particularly valued, and communities or settlements where views are an important contribution to the landscape setting.</p> <p>People enjoying outdoor recreation where the view is important to the experience (e.g. users of long-distance trails and scenic Public Rights of Way (PRoW) and cycle routes, walkers on National Trust or other access land, visitors to Country Parks).</p> <p>Visitors to recognised viewpoints and to heritage assets or other attractions where views of the surroundings are an important contributor to the experience.</p> <p>Users of scenic roads, railways or waterways identified as designated tourist routes.</p>
Moderate sensitivity	<p>People enjoying outdoor recreation where the view is secondary to the activity (e.g. people playing outdoor sports, users of PRoW where the main activity is exercise or getting from A to B).</p> <p>Schools and other institutional buildings, and their outdoor areas.</p> <p>Users of local roads and rail passengers (where views form an intrinsic part of the experience except where noted above).</p> <p>People at work and commercial premises where the view is an important contribution to the quality of the workplace (e.g. certain business parks, hotels and restaurants designed to take advantage of a scenic setting).</p>
Low sensitivity	<p>People at work and commercial premises (except where noted above).</p> <p>Users of recreational facilities where the purpose of that recreation is not related to the view (e.g. indoor sports facilities, football pitches and stadia).</p> <p>Users of trunk roads and main railway routes where highly transient views are afforded.</p>

Magnitude of Impact

7.4.36. Magnitude of impact considers the scale and nature of change within the view, taking into consideration the duration of change, the distance of the receptor from the development, the

direction of view, the receptors speed of movement, screening (both proposed or removal of existing vegetation) and embedded mitigation measures. During the Scheme EIA, consideration has been given to the proposed mitigation measures intended to further avoid, reduce or where possible reverse those impacts caused by the Scheme. **Table 7-8** which reproduces Table 2 in IAN 135/10, Annex 2 (**Ref 7.1**), describes the scale of magnitude proposed for carrying out the visual effects section of the assessment.

Table 7-8 - Visual magnitude of impact rating

Rating	Criteria
Major	The project, or a part of it, would become the dominant feature or focal point of the view.
Moderate	The project, or a part of it, would form a noticeable feature or element of the view which is readily apparent to the receptor.
Minor	The project, or a part of it, would be perceptible but not alter the overall balance of features and elements that comprise the existing view.
Negligible	Only a very small part of the project would be discernible, or it is at such a distance that it would form a barely noticeable feature or element of the view.
No Change	No part of the project, or work or activity associated with it, is discernible.

SIGNIFICANCE OF EFFECTS

Significance of Landscape Effect

- 7.4.37. The evaluation of effects has involved consideration of the sensitivity to change, derived during the baseline assessment, and the predicted magnitude of the impact that would occur in light of the construction and subsequent operation of the Scheme. The predicted effects take into consideration the embedded measures incorporated as part of the preliminary design of the Scheme (such as screening bunds and/or agreed specific screen planting) and the temporal or permanent nature of that change.
- 7.4.38. An indication of the interactions between sensitivity and magnitude of impact and the likely resulting significance of effects are outlined in **Table 7-9** which reproduces Table 3 in IAN 135/10, Annex 1 (**Ref 7.1**).

Table 7-9 - Significance of landscape effects matrix

	Major	Slight/Moderate	Moderate/Large	Large/Very Large
Magnitude	Moderate	Slight	Moderate	Moderate/Large
	Minor	Neutral/Slight	Slight	Slight/Moderate
	Negligible	Neutral/Slight	Neutral/Slight	Slight
	No change	Neutral	Neutral	Neutral
		Low	Moderate	High
	Sensitivity			

- 7.4.39. As is the case with the magnitude of impacts, effects can be either adverse or beneficial. While **Table 7-10**, which reproduces Table 3 in IAN 135/10, Annex 1 (**Ref 7.1**) provides a framework by which to aid consistency in reporting likely effects arising from the Scheme, professional judgement should still be applied. Given that the criteria low/moderate/major/negligible/no change represent levels on a continuum or continuous gradation, awareness of the relative balance between sensitivity and magnitude is required.
- 7.4.40. The findings of the assessment will be represented using a descriptive, descending scale ranging from large - moderate - slight (adverse) through neutral to an ascending scale of slight - moderate - large (beneficial). There is a further effect rating, of very large- used to indicate (adverse) effects on a very high quality landscape or (beneficial) for the creation of an iconic, high quality features and/or series of elements. Explanation of the significance of effect ratings is provided in **Table 7-10 - Significance of landscape effects** below which reproduces Table 4 in IAN 135/10, Annex 1 (**Ref 7.1**). Typically, landscape effects identified as being of moderate adverse or greater are considered to be significant. Effects will be determined to be significant on an individual basis for each character area using criteria set out in IAN 135/10 and professional judgement.

Table 7-10 - Significance of landscape effects

Rating	Criteria
Very Large Beneficial Effect	The proposal will: <ul style="list-style-type: none"> - Greatly enhance the character (including quality and value) of the landscape. - Create an iconic high-quality feature and/or series of elements. - Enable a sense of place to be created or greatly enhanced.

Rating	Criteria
Large Beneficial Effect	<p>The proposal will:</p> <ul style="list-style-type: none"> - Enhance the character (including quality and value) of the landscape. - Enable the restoration of characteristic features and elements lost as a result of changes from inappropriate management or development. - Enable a sense of place to be enhanced.
Moderate Beneficial Effect	<p>The proposal will:</p> <ul style="list-style-type: none"> - Improve the character (including quality and value) of the landscape. - Enable the restoration of characteristic features and elements partially lost or diminished as a result of changes from inappropriate management or development. - Enable a sense of place to be restored. It fits very well.
Slight Beneficial Effect	<p>The proposal will:</p> <ul style="list-style-type: none"> - Complement the character (including quality and value) of the landscape. - Maintain or enhance characteristic features and elements. - Enable some sense of place to be restored.
Neutral Effect	<p>The proposal will:</p> <ul style="list-style-type: none"> - Maintain the character (including quality and value) of the landscape. - Blend in with characteristic features and elements. - Enable a sense of place to be retained.
Slight Adverse Effect	<p>The proposal will:</p> <ul style="list-style-type: none"> - Not quite fit the character (including quality and value) of the landscape. - Be at variance with characteristic features and elements. - Deduct from a sense of place.
Moderate Adverse Effect	<p>The proposal will:</p> <ul style="list-style-type: none"> - Conflict with the character (including quality and value) of the landscape. - Have an adverse impact on characteristic features or elements. - Diminish a sense of place.
Large Adverse Effect	<p>The proposal will:</p> <ul style="list-style-type: none"> - Be at considerable variance with the character (including quality and value) of the landscape. - Degrade or diminish the integrity of a range of characteristic features and elements. - Damage a sense of place.

Rating	Criteria
Very Large Adverse Effect	The proposal will: <ul style="list-style-type: none"> - Be at complete variance with the character (including quality and value) of the landscape. - Cause the integrity of characteristic features and elements to be lost. - Cause a sense of place to be lost.

Significance of Visual Effect

7.4.41. The evaluation of the significance of the visual effects of the project is derived by assessing the sensitivity of the receptor, against the degree and magnitude of change in the view. Similar to the assessment of landscape effects, **Table 7-11** which reproduces Table 3 in IAN 135/10, Annex 2 (**Ref 7.1**) provides a framework by which to aid consistency in reporting likely effects arising from the Scheme. However, as above, professional judgement should still be applied.

Table 7-11 - Significance of visual effects matrix

	Major	Slight/Moderate	Moderate/Large	Large/Very Large
Moderate		Slight	Moderate	Moderate/Large
Minor		Neutral/Slight	Slight	Slight/Moderate
Negligible		Neutral/Slight	Neutral/Slight	Slight
No change		Neutral	Neutral	Neutral
		Low	Moderate	High
Sensitivity				

7.4.42. Significance of effects can be either adverse or beneficial in nature,

7.4.43. Table 7-12 which reproduces Table 4 in IAN 135/10, Annex 2 (**Ref 7.1**) sets out the proposed significance categories for use within the Stage 3 (Preliminary Design) assessment. The various levels of effect can be applied to individual properties, businesses, groups of housing, areas of open space and PRow including highways as well as representative viewpoints. Typically, visual effects identified as being of moderate adverse or greater are considered to be significant. Effects will be determined to be significant on an individual basis for each receptor using criteria set out in IAN 135/10 and professional judgement.

Table 7-12 - Visual significance of effects rating

Rating	Criteria
Very Large Beneficial Effect	This would typically apply where: <ul style="list-style-type: none"> - The project would create an iconic new feature that would greatly enhance the view.
Large Beneficial Effect	This would typically apply were: <ul style="list-style-type: none"> - The project would lead to a major improvement in a view from a highly sensitive receptor.
Moderate Beneficial Effect	This would typically apply where: <ul style="list-style-type: none"> - The project would cause obvious improvement to a view from a moderately sensitive receptor, or perceptible improvement to a view from a more sensitive receptor.
Slight Beneficial Effect	This would typically occur where: <ul style="list-style-type: none"> - The project would cause limited improvement to a view from a receptor of medium sensitivity, or would cause greater improvement to a view from a receptor of low sensitivity.
Neutral Effect	This would typically occur where: <ul style="list-style-type: none"> - No perceptible change in the view.
Slight Adverse Effect	This would typically occur where: <ul style="list-style-type: none"> - The project would cause limited deterioration to a view from a receptor of medium sensitivity, or cause greater deterioration to a view from a receptor of low sensitivity.
Moderate Adverse Effect	This would typically apply where: <ul style="list-style-type: none"> - The project would cause obvious deterioration to a view from a moderately sensitive receptor, or perceptible damage to a view from a more sensitive receptor.
Large Adverse Effect	This would typically apply where: <ul style="list-style-type: none"> - The project would cause major deterioration to a view from a highly sensitive receptor, and would constitute a major discordant element in the view.
Very Large Adverse Effect	This would typically apply where:

Rating	Criteria
	<ul style="list-style-type: none"> - The project would cause the loss of views from a highly sensitive receptor, and would constitute a dominant discordant feature in the view.

DATA SOURCES

- a. Gateshead Landscape Character Assessment Report (**Ref 7.14**)
- b. Made in Gateshead: Urban Character Assessment (**Ref 7.15**)
- c. City of Sunderland Landscape Character Assessment (**Ref 7.16**)
- d. Gateshead Conservation Area Character Statements, Strategies and Policy Guidelines (**Ref 7.17**)
- e. National Character Area profile: 14. Tyne and Wear Lowlands (**Ref 7.18**)
- f. National Heritage List for England (**Ref 7.19**)

POLICY AND GUIDANCE

7.4.44. The following guidance documents have informed the methodology detailed in this section.

- a. IAN 135/10 Landscape and Visual Effects Assessment (**Ref 7.1**)
- b. Guidelines for Landscape and Visual Impact Assessment (Third edition) (**Ref 7.11**)

7.4.45. No policy documents have informed the methodology.

CONSULTATION

7.4.46. Viewpoints and receptors for the visual assessment were agreed with Gateshead Council and Sunderland City Council in March 2018, refer to **Appendix 4.4** of this ES (**Application Document Reference: TR010031/APP/6.3**).

7.4.47. Photomontage viewpoints were agreed with Gateshead Council in May 2018 refer to **Appendix 4.4** of this ES (**Application Document Reference: TR010031/APP/6.3**).

7.5 ASSESSMENT ASSUMPTIONS AND LIMITATIONS

7.5.1. The following limitations have been identified and assumptions have been made in undertaking the assessment:

- a. That proposed mitigation measures would be implemented as indicated on **Figure 7.6 Landscape Mitigation Design** of this ES (**Application Document Reference: TR010031/APP/6.2**) and that planting is successful in its establishment and that average growth rates are achieved in the assumed five year establishment period and up to the design year.
- b. Assumptions using professional judgement, have been made as to the nature of the view and the associated receptor that might contribute towards sensitivity, based on information gathered as part of desk top studies, aerial photography and site surveys,

using comparable receptors with similar orientation, distance and nature where appropriate.

- c. It is assumed that the design of the slopes in cutting and embankment would, where required, provide suitable growing conditions for native trees and that suitable depths of top soils can be achieved.
- d. Viewpoints have been taken from publicly accessible locations and no access to private property has been sought, therefore when establishing the views from dwellings and/or buildings this has been based on information from a combination of desk-top studies and field surveys and using professional judgement. Therefore, the sensitivity, magnitude of impact and significance of effect on views from such properties are predicted, based on an understanding of the landscape, the nature of the viewpoints, and past experience.
- e. The ZVI Influence map, **Figure 7.3 Zone of Visual Influence** of this ES (**Application Document Reference: TR010031/APP/6.2**), is provided to give an indication of the extent of areas with potential views of the changes arising as a result of the Scheme. It is based on the degree to which changes are likely to be perceived within the built environment and is based on 1:1,250 mapping and adjusted following site survey to take account of the screening effect by buildings, local variations in landform, and vegetation. Use of a zone of visual influence map also has the following limitations:
 - i. There are a number of areas within the zone of visual influence map from where there are potential views of the Scheme, but which comprise land where the general public do not have access.
 - ii. There may be views of the Scheme from outside the zone of visual influence.
 - iii. It does not take account of the screening and/or filtering of views from all intervening features, such as buildings, trees and hedgerows.
 - iv. It does not take account of the orientation of a viewer – for example when travelling in a vehicle.
- f. The draft Development Consent Order (DCO) contains powers of lateral and vertical deviation. The EIA has taken the Limits of Deviation (LoD) into account and the approach taken is described in **Chapter 4 Environmental Assessment Methodology, paragraph 4.5.4** of this ES (**Application Document Reference: TR010031/APP/6.1**). The outputs of the assessment are not considered likely to change materially as a result of the power of deviation.
- g. The assumptions adopted in drafting the zone of visual influence have been that the observer height is 1.5m above ground level and that the tallest moving component associated with the Scheme would be a 4.5m Heavy Goods Vehicle (HGV), measured above ground level.

7.6 STUDY AREA

- 7.6.1. For the landscape character assessment, the Study Area is the extent of the relevant local landscape character areas impacted by the Scheme and typically this extends to a buffer of approximately 2km either direction from the Scheme Footprint. This has been increased

from the 1km buffer identified during scoping, following further assessment work which identified broader awareness within the landscape setting to the Scheme Footprint, refer to **Figure 7.1 Landscape Character Study Area, Landscape Character Areas** and **Figure 7.2 Landscape Character Photographs** of this ES (**Application Document Reference: TR010031/APP/6.2**).

- 7.6.2. The following documents have been used in reviewing and collating existing available information relating to landscape character in order to define landscape character areas which form the Study Area:
- a. Gateshead Landscape Character Assessment Report (**Ref 7.14**).
 - b. Made in Gateshead: Urban Character Assessment (**Ref 7.15**).
 - c. City of Sunderland Landscape Character Assessment (**Ref 7.16**).
 - d. Gateshead Conservation Area Character Statements, Strategies and Policy Guidelines (**Ref 7.17**).
- 7.6.3. For the visual impact assessment, the Study Area has been defined as the extent of the ZVI for the Scheme. The initial Digital Terrain Model based ZVI (refer to **Figure 7.3 Zone of Visual Influence** of this ES (**Application Document Reference: TR010031/APP/6.2**)) shows the area of land from which there could be a view of any part of the Scheme, and is based on OS Terrain 5 data. It is based on a bare earth model using points at 4.5m above the proposed ground level to reflect the presence of high sided vehicles and an observer height of 1.5m Above Ordnance Datum (AOD) to reflect eye level. This does not take account of landscape features such as woodland, hedgerows, and significant trees and/or built form. This has subsequently been reviewed and refined with site based information to take account of features identified above and is indicated on **Figure 7.3 Zone of Visual Influence** of this ES (**Application Document Reference: TR010031/APP/6.2**).

7.7 BASELINE CONDITIONS

LANDSCAPE CHARACTER

- 7.7.1. This section describes the baseline environment for the landscape character of the Study Area, refer to **Figure 7.1 Landscape Character Study Area and Landscape Character Areas** of this ES (**Application Document Reference: TR010031/APP/6.2**), for the location and extent of landscape related designations and **Figure 7.2 Landscape Character Photographs** of this ES (**Application Document Reference: TR010031/APP/6.2**) for typical views within the areas.
- a. There are no National Parks or AONB within or next to the Study Area.
 - b. Watergate Forest Park lies approximately 600m to the west of junction 67. This country park lies to the north of the A692 and forms the western edge of Lobley Hill that forms a visual barrier with the A1 corridor.

GREEN BELT

- 7.7.2. Much of the Study Area falls within designated Green Belt land, namely the Tyne and Wear Green Belt around Gateshead and Newcastle within the Gateshead district, refer to **Figure 7.1 Landscape Character Study Area and Landscape Character Areas** of this ES (**Application Document Reference: TR010031/APP/6.2**).
- 7.7.3. The Green Belt designation extends to incorporate an extensive swathe of open countryside – and within the study area this extends approximately 4km to the south and south-west of Gateshead and is defined to the north by the urban edge of Gateshead, by the existing A1 corridor, the urban edge of Allerdene and Harlow Green, and the western and northern edges of Birtley. The broad expanse of open countryside – designated as Green Belt extends across the Team valley floor and incorporates the rising landform to the west, including the village of Kibblesworth and Ravensworth estate, it incorporates farmland, woodland and numerous fields and hedgerows. The Green Belt designation incorporates Landscape Character Area (LCA) 1 – Team Valley, as identified on **Figure 7.1: Landscape Character Study Area and Landscape Character Areas** of this ES (**Application Document Reference: TR010031/APP/6.2**), in its entirety and extends to the western edge of LCA 5 – Birtley.
- 7.7.4. The Green Belt designation also extends to the north east, incorporating the sloping landscape to the south of Eighton Banks and Springwell and forms an open landscape between Gateshead and Washington. This is identified on **Figure 7.1: Landscape Character Study Area and Landscape Character Areas** of this ES (**Application Document Reference: TR010031/APP/6.2**) as LCA 4 Springwell Rise. This open elevated countryside comprises mainly arable farmland, and has noticeably less extensive woodland than the landscape to the west.
- 7.7.5. Linking the two distinctive areas of designated Green Belt is a narrow tract of land, forming a green buffer between the southern suburbs of Gateshead to the north and Birtley to the south. This is dominated by the existing A1 as it follows the crest of the valley slopes - as part of the transition between the Team valley and the rising landform to the north-east. Within this landscape and set overlooking the Team valley is the statue of the Angel of the North. It is within this transitional landscape that the existing A1 corridor forms a locally significant feature and currently the existing roadside planting and woodland within the immediate landscape achieves a good degree of integration. The result is that the coalescence of the two settlements has been avoided and they remain distinct urban areas.

CONSERVATION AREAS

- 7.7.6. This part of the A1 runs through or is next to four CAs that have been included in so much as they contribute to landscape character, refer to **Figure 7.1 Landscape Character Study Area and Landscape Character Areas** of this ES (**Application Document Reference: TR010031/APP/6.2**).

- a. Ravensworth CA is to the west of the Team Valley. This contains the remains of a medieval castle and its boundary reflects the 19th-century Ravensworth Estate. The boundary of the CA is immediately next to the A1 corridor.
- b. Lamesley CA lies approximately 300m to the south and west of the A1 next to the ECML.
- c. Birtley CA lies approximately 800m to the south west of the Study Area. It covers the historic centre of Birtley village.
- d. Chowdene CA lies approximately 520m to the east of the Study Area.

7.7.7. For an assessment of the effects on Conservation Areas refer to **Chapter 6 Cultural Heritage** of this ES (**Application Document Reference: TR010031/APP/6.1**).

NATIONAL CHARACTER AREAS

- 7.7.8. To assess a new development there must be an understanding of both landscape character and the landscape quality of the surrounding areas. National Character Areas (NCA) have been developed by Natural England and profile 159 areas across England reflecting natural boundaries in the landscape. The NCA profiles provide information relating to landscape, wildlife, cultural and geological features, forces for change and environmental opportunities.
- 7.7.9. The Scheme sits within NCA 14 - Tyne and Wear Lowlands (**Ref 7.18**). This extends from Newcastle upon Tyne and Tynemouth in the north to Durham in the south and is centred on the lower valleys of Tyne and Wear, characterised by broadleaved woodlands. NCA 14 is densely populated and its history of urban settlement and industry has had a significant impact on its character. NCA 14 is crossed by major north-south transport routes including the A1 and the ECML.
- 7.7.10. Key characteristics of the national character area that are relevant to the Study Area are:
- a. Undulating landform incised by the river valleys of the Tyne and the Wear and their tributaries.
 - b. Widespread urban and industrial development with a dense network of major road and rail links and the spreading conurbations of Tyneside in the north. Dispersed towns and villages further south.
 - c. Between settlements, wide stretches of agricultural land with large, regular, arable fields bordered by hedgerows with few hedgerow trees, often with large farmsteads and urban fringe pasture land with pony and cattle grazing.
 - d. Strong legacy of mining, much restored to agriculture, forestry, industry, housing and amenity uses such as country parks, linking urban areas with countryside and coast by transforming wagonways to cycle routes and footpaths.
 - e. Industrial prosperity reflected in the large number of 18th and 19th-century country houses, set within parkland in the vicinity of major settlements.
 - f. Mixed woodland estates and plantations on restored spoil heaps provide woodland cover in some areas, although sparse elsewhere.
 - g. Oak or oak/birch broadleaved woodland, a characteristic feature on steep sides of narrow river valleys, with some river flood plains holding pockets of fen, reedbed and species-rich grasslands.

- h.** Long history of settlement, mining and industry evidenced through historic buildings and settlement patterns which form a core part of today's landscape.
- i.** Important tourist attractions within Durham, Newcastle upon Tyne, Whitley Bay and two World Heritage Sites – Hadrian's Wall and Durham Castle and Cathedral.

7.7.11. The Scheme, which is an improvement to the existing A1 corridor is not anticipated to give rise to a perceptible change in the way in which the NCA 14 - Tyne and Wear Lowlands (**Ref 7.18**) would be perceived. As the scale and nature of the changes are confined to a geographically small area within the wider character area, no further assessment has been carried out of potential impacts and effects at a national scale.

LANDSCAPE CHARACTER CONTEXT

- 7.7.12. The landscape associated with the Study Area comprises a distinct contrast between the open countryside to the south and west of the A1, much of which is designated as Green Belt, and the urban and urban fringe to the north and east associated with the urban edge of Gateshead and the wider Newcastle and Gateshead conurbation. This landscape forms the setting to the iconic Angel of the North sculpture which is highly conspicuous within the wider landscape.
- 7.7.13. The landform is influenced by the River Team that flows broadly north. Higher ground between 165 and 200m AOD forms a long low hill to the west, the highest point at 216m AOD occurring to the south-east of the hamlet of Sunniside. The intervening landform forming a relatively low lying, expansive landscape before rising to the west. To the east of the River Team, as it approaches the A1, the landform once again rises markedly to the east and north to an initial height of 150m AOD, the suburbs of Springwell and Wrekenton occupying this higher ground.
- 7.7.14. Vegetation through the Study Area is typically hedgerows, pockets of woodland and to the north of the Study Area more extensive woodland and plantations at Hill Head Wood and High Park Wood associated with former estate woods. Ravensworth Castle to the west of the Study Area has associated with it, some extensive woodland, High Park Wood and Hill Head Wood occupying the steeper slopes to the south of Watergate Forest Park. Further woodland at Longacre Wood occurs to the east of the Tyne Marshalling Yard and either side of the A1 to the south of Harlow Green including ancient woodland at Longacre Dene. Open spaces within Birtley have been used for housing infill in the past few years. However, there is some evidence of urban fringe land uses including smaller paddocks for pony grazing around Birtley and Eighton Lodge. There are also recreational facilities, including a golf course and fishing lakes.
- 7.7.15. The existing roadside vegetation, which has substantially matured since it was planted forms a linear woodland immediately next to the corridor, for the most part screening the road and integrating the corridor within the existing landscape. To the east of the Study Area and in association with the suburbs on the higher ground such as Chowdene and Harlow Green vegetation is limited to garden vegetation, street trees and small pockets of open space, despite this the landscape retains a vegetated character.

7.7.16. One of the most striking features of the Study Area is the Team Valley Trading Estate, an extensive area of offices, light industrial, warehousing and retail parks, representing one of the main local land uses. The existing A1 forms the southern and western boundary to the site and forms a clear demarcation between the heavily developed landscape to the east and the open countryside to the west.

LOCAL LANDSCAPE CHARACTER AREAS

7.7.17. The following Local Landscape Character Areas (LLCA) have been developed based on character areas identified within the relevant landscape character assessments, refer to **paragraph 7.6.2**. Where appropriate and to establish a baseline that is reflective of the nature of the Scheme, several character areas have been amalgamated where they share similar characteristics and features. For the location and extent of the character areas refer to **Figure 7.1 Landscape Character Study Area and Landscape Character Areas** and **Figure 7.2 Landscape Character Photographs** of this ES (**Application Document Reference: TR010031/APP/6.2**).

Landscape Character Area 1 - Team Valley

- 7.7.18. A rural landscape of mixed pasture and arable fields and some large areas of woodland at the southern edge of Gateshead and is designated as Green Belt. The character area boundary is defined to the north and east by Gateshead urban edge, to the south by the River Team flowing north-east from High Urpeth and to the west by a wooded ridge at Ravensworth. The area generally feels of a large scale and any potential tranquillity of the rural setting is frequently disturbed by the availability of views across the valley to Gateshead and the presence of disruptive elements that include the A1, ECML, Tyne Marshalling Yard and Birtley wastewater treatment works infrastructure along the valley bottom.
- 7.7.19. The Angel of the North sculpture designed by Anthony Gormley was installed between the A1 and A167 in 1998 and is believed to be the largest angel sculpture in the world, its size and location make it one of the most frequently viewed pieces of artwork. The Angel of the North is nationally well known and of extremely high value at a regional level, although now surrounded by woodland, views of the artwork are screened or filtered views from some points in the valley.
- 7.7.20. Fields are bounded by mature hedgerows with trees and are of irregular size and shape laid out within a pattern of narrow, winding lanes and wooded watercourses. There are some significant areas of woodland to the north at Ravensworth including replanted ancient woodland in Ravensworth CA at Hill Head Wood and High Park Wood, and to the east at Longacre Wood and ancient woodland at Longacre Dene. Land use varies between arable, pasture and some areas of reclamation, the historic relationship between agriculture and mining activities reflected in the small former mining settlements that are scattered throughout the landscape such as Kibblesworth.

- 7.7.21. The Ravensworth Estate to the north of the character area has been occupied since pre-medieval times and mined for coal since the 14th-century, it includes several listed buildings and features, and two scheduled monuments; the medieval quadrangular castle and 17th-century coal mill. While the scheduled monuments are of great historical importance, they are in ruined condition and the absence of public roads or PRoW through the area renders them inaccessible. The only historical feature visible from public areas is the Grade II listed Tudor sandstone entrance arch, the context of which is degraded by its location on Coach Road opposite the A1 and overgrown vegetation.
- 7.7.22. There are a number of visual detractors within the landscape, including the overhead power lines that cross in a broadly east west direction, crossing the A1 to the south of its junction with the A167. The easterly facing landform also allows for extensive views east towards Gateshead urban area, the A1 itself, the ECML and associated structures, and the Team Valley Industrial Estate, all of which are considered to represent visual detractors. The Tyne Marshalling Yard is an extensive area of railway sidings that, although partially screened by boundary vegetation is visible from higher ground which combined with associated floodlighting results in a substantial visual detractor within the character area.
- 7.7.23. Properties and farm buildings varying in age from 17th to 20th-century are scattered throughout the CA and wider valley side with small groups of properties next to the A1 at Lady Park and within Lamesley CA, and a larger settlement at Kibblesworth village.
- 7.7.24. Kibblesworth is the most notable settlement within the character area and is a former coalmining village of predominantly 20th-century housing constructed using red brick, concrete and green cladding, stone and slate tiles. Several footpaths lead out of the village including part of the Great North Forest Heritage Trail along the historic Bowes Railway line, and paths across a capped landfill site which appears as a conspicuous artificial mound within the valley.
- 7.7.25. The Ravensworth and Lamesley CAs contain some distinctive historical buildings and features which could not be replaced but these are degraded by their close proximity to the A1 and other large scale infrastructure. The area, designated as Green Belt, is highly valuable at a local level as a well-used and accessible rural area next to the urban area of Gateshead with community woodland areas, public footpaths and the Great North Forest Heritage Trail. The Angel of the North is valuable at a national level, although at a local level adjacent woodland limits the availability of views.
- 7.7.26. The landscape is considered to be of good quality, and of high value in that it provides important green space next to the Gateshead and Newcastle conurbation and this is reflected by its designation in part as Green Belt. The combination of landform, exposed slopes and treed nature of the landscape would suggest that the landscape has a high susceptibility to change of the type proposed, although this decreases to medium susceptibility to the east of the character area and at the transition from rural to urban land uses occurs. The landscape is therefore considered to be of moderate sensitivity.

Landscape Character Area 2 - Team Valley Industrial Estate

- 7.7.27. An extensive 300ha trading estate of retail, industrial units and offices arranged on a structured grid along the valley bottom. The character area boundary is defined to the south and west by the A1, to the east by the ECML and to the north by the B1426. The area feels large scale and artificial due to the wide, straight roads, ornamental plant species and homogenous style of buildings in the form of large sheds constructed primarily in red brick and brightly coloured plastic.
- 7.7.28. The River Team is culverted in the south of the character area, between the A1 and Eastern Avenue where it emerges as a locally discernible, narrow green corridor flowing north in a channel parallel to Queensway North. Movement around the area is mainly vehicular, and pedestrian access is restricted to footpaths alongside the roads with a short section of footpath alongside the river between Third Avenue and Fifth Avenue. The majority of roads are lined with trees and neatly clipped shrubs and there are larger pockets of trees along the A1 and ECML.
- 7.7.29. The area is of a relatively commonplace style and layout, although the size of the industrial estate is unusually large and it is locally important as an employment site. It offers little in the way of quality and value and its geographical extents requires it to be identified separately from adjoining character areas.
- 7.7.30. As a landscape character area, the Team Valley Industrial Estate is of ordinary quality and low value. Its existing relationship with the adjacent A1 suggests that it would also have a low susceptibility to change of the type proposed. It is therefore considered that the character area would be of low sensitivity to the type of development being proposed.

Landscape Character Area 3 - Chowdene/Wrekenton Suburbs

- 7.7.31. A suburban residential area of unremarkable housing on a gently descending slope to the west and towards the River Team, with frequent views south to the Angel of the North and west to the opposing valley slopes. The character area boundary is defined to the north by older buildings within the 19th-century Gateshead Parish boundary, to the east by Green Belt countryside, to the south by the A1 and to the west by the ECML. Sense of scale and tranquillity varies throughout the area depending on the condition and layout of housing and proximity to busy through routes Durham Road, Long Bank/Old Durham Road, A1 and the ECML.
- 7.7.32. Housing is predominantly two storey with 10 multi-storey blocks and varies in age from inter/post-war to modern but offers little in terms of characterful style or materials. The only distinctive properties found throughout the character area are 1960-80s green and red tiled terraced houses, and stone buildings at the edge of the character area at Eighton Lodge care home and Eighton Banks. The steeple of St John's Church to the north-east of the area is a locally distinctive landmark and visible from across the valley. Open space in the area consists of low amenity value grassed areas or formal sports facilities such as

Ravensworth Golf Course to the south east. Retail facilities are sparsely spread across the area with a small concentration of shops at Wrekenton.

- 7.7.33. There are few distinctive features within the area, the merging of the settlements and outlying villages has resulted in an extensive area of housing, linked by pockets of open space and fringed by remnant farmland, mainly used as pony grazing. While there are pockets of higher quality associated with the Chowdene CA, overall the landscape has an ordinary quality and low value associated with it and is considered to have a low susceptibility to change of the type proposed. On balance it is considered that the landscape character area is of low sensitivity.

Landscape Character Area 4 - Springwell Rise

- 7.7.34. A semi-rural ridge landscape with a historic industrial core between the urban edges of Gateshead and Sunderland, forming part of the Tyne and Wear Green Belt. The character area boundary is defined by the A194 to the east, A1 to the south, Gateshead urban edge to the west, and Heworth Golf Club to the north. The presence of mining industry, infrastructure and busy local roads diminishes the potential tranquillity of the Springwell village core and associated footpaths. The area generally feels small scale, particularly between Rockcliffe Way and Springwell at the top of the ridge, and larger scale to the south where there are frequent views across the expansive Team Valley.
- 7.7.35. Irregular shaped fields bounded by gappy hedgerows are arranged as larger arable fields on lower ground and smaller scale pasture on higher ground around Springwell village. Small pockets of woodland are scattered throughout the area and linear tree cover follows the River Don, A1 and A194. There are frequent footpaths across the area although some have restricted access due to vegetation growth and waymarking to some routes suggests these are not well used, with the exception of the Great North Forest Heritage Trail which follows a short section of the Bowes Railway from the A1 to Dunkirk Farm. The Bowes Railway Scheduled Monument (SM) runs south west to north through the area, it is one of the earliest and best preserved examples of a rope haulage system and the only working example in the world; despite this it is vulnerable to vandalism and a programme of restoration is ongoing. The visitor centre is located north of Springwell and the active Springwell Quarry which provide modern context to the railway's historic industrial use.
- 7.7.36. Springwell village has a distinctive core of 19th-century sandstone buildings constructed to house mine workers, surrounded by more modern and less distinctive housing of varying age. The rows of terraces and detached properties along Rockcliffe Way to the south west of Springwell are also of 19th-century sandstone construction and locally distinctive overlooking sloping fields to the south. Isolated farmsteads are dispersed amongst the pattern of fields with the exception of the lane next to the A1 where there is a concentration of less characterful properties, equestrian facilities, a hotel and buildings serving the Angel of the North fishing lakes.
- 7.7.37. Historically the area was industrial with distinctive buildings associated with mining operations; mining continues in the area and modern development has been added to

Springwell. The Bowes Railway SM is in degraded condition but offers recreational value through the visitor centre and as part of a national trail.

- 7.7.38. The area is highly valuable at a local level as an accessible rural area between Gateshead and Sunderland, and this is reflected in its designation as Green Belt, the area having retained its largely agricultural characteristics and some cultural features. The landscape includes some notable features that would suggest that it is of good quality and of high local value. The landscape character area's open nature would suggest that it has a medium susceptibility to change of the type proposed and its sensitivity has therefore been judged to be moderate.

Landscape Character Area 5 - Birtley

- 7.7.39. A small character area encompassing the settlement of Birtley. The valley slopes comprise a residential area with a colourful and historic retail centre with frequent views west to the opposite valley side. The character area boundary is defined by the Great North Forest Heritage Trail and the A1 to the north and east, and Portobello and Birtley industrial areas and golf club to the south and west. Away from the busy through route of Durham Road, the pattern of narrow roads and low rise buildings restricts views through the area resulting in a small scale and intimate nature. The layout of properties also limits awareness and influence of the A1 to the residential areas immediately next to it with the exception of those on the very fringe of the character area that face or back onto the A1 corridor.
- 7.7.40. Housing is predominantly post war and 1960s-modern of average quality arranged along cul-de-sacs and crescents. The few buildings of distinctive character outside Birtley CA include 1960-1980 blocks of flats and Victorian brick terraced properties and detached villas fronting on to Durham Road. The small 'cottage-like' houses at Leyburn Place are also distinctive for their garden city-style scale and layout. Public open space is limited to Birtley Crematorium and grassed areas which are designated for housing development.
- 7.7.41. Birtley CA encompasses the busy local retail centre, dominated by the A167, some modern development and historic late nineteenth and early 20th-century buildings including the Grade II listed Co-operative Buildings on Durham Road. The most distinctive buildings are the individual properties in extensive grounds to the north of the CA and the two churches; 1840s Early English revival style St Joseph's and 1840s Norman revival style St John's. Older properties are generally constructed of local Coal Measure Sandstone such as the rubble and roughly-coursed small brick terraced Daisy Cottages, and some modern infill also utilises stone. As in the wider character area there is very little public open space but frequent mature trees and hedges soften the area and the small grassed space around the Grade II listed statue of Edward Moseley Perkins has the feel of a village green.
- 7.7.42. Distinctive features are mainly concentrated within Birtley but throughout the area these elements are mixed within a pattern of modern and late 20th-century housing. It is a landscape of typically ordinary quality with the exception of Birtley CA. The value of the landscape is considered to be low in that it has few remarkable features associated with it despite some extensive areas of public open space. The area would be able to partly

accommodate change of the type proposed and so it is considered to have a low susceptibility to change and is judged to be of low sensitivity.

VISUAL AMENITY

7.7.43. The visual baseline has identified visual receptors throughout the Study Area, these have been broken down into broad groups based on the receptor type, that has informed their sensitivity, refer to **Section 7.4 Assessment Methodology**. The broad categories identified within the assessment are outlined below and reference should be made to **Appendix 7.1** of this ES (**Application Document Reference: TR010031/APP/6.3**) for the baseline description of the individual receptors:

- a. Residential – encompassing individual property and residential homes.
- b. PRoW – includes footpaths, bridleways.
- c. Other Receptors – include commercial, hotels, open access areas such as woodland and visitor attractions.
- d. Highways – local roads outwith the A1 corridor.

Residential

7.7.44. Residential development, typically considered to be of high sensitivity due to the importance that individuals place on the view from their homes varies significantly within the context of the Study Area. The nature of the land use pattern gives rise to areas of dense housing on higher ground to the north and east of the A1, contrasting with the more sparsely populated and varied nature of the receptors to the south and west. Several isolated properties, scattered farms and small villages have increasingly expansive views towards the A1 as the landform rises.

7.7.45. With the exception of the northern edge of Birtley and a small number of properties on Ladypark and Coach Road, which lie immediately next to the existing A1, the remaining residential receptors typically have views within which the A1 is a part of the view rather than dominating.

Rights of Way

7.7.46. Numerous footpaths exist within the Study Area, with a particular concentration to the south of the A1 and west of Birtley. These are typically footpaths with occasional bridleways and a single Sustrans route (number 7) (**Ref 7.20**) crossing the Study Area from west to east to the south of Gateshead and north of Birtley. This route makes use of the former Bowes Railway line that accommodates the Great North Forest Heritage Trail, passing beneath the A1 to the north of Birtley.

7.7.47. Views from PRoW vary between open expansive views and narrow enclosed views, screened by woodland and/or hedgerows. Where PRoW pass close to or cross the existing A1, direct uninterrupted views exist and the A1 can briefly dominate the existing view and are typically regarded as being of high sensitivity.

Other Receptors

- 7.7.48. These vary between commercial property, areas of public access and points of interest, including the Angel of the North sculpture. Due to the nature of these receptors the relative sensitivity can be highly variable – with commercial and office development being of low sensitivity, contrasting with areas of open space and visitor attractions within which the views afforded are of high importance giving rise to views of high sensitivity.

Highways

- 7.7.49. Views of the existing A1, achieved from local roads tend to be transient, with views themselves being highly variable in nature due to roadside features such as woodland, hedgerows or built form. Typically, the focus of the travelling public is the road ahead and their expectation is somewhat lower than individuals using footpaths or associated with residential development, therefore associated sensitivity is considered to be at the lower end of the scale and is typically low.

7.8 POTENTIAL IMPACTS

- 7.8.1. Potential impacts to landscape designations, landscape character and visual amenity during the construction and operational phases have been identified below, and the impacts likely to arise in the absence of specific mitigation measures considered.
- 7.8.2. The assessment of the impacts arising as a result of the Scheme are summarised below. Both the Allerdene embankment option and Allerdene viaduct option have been considered and, unless stated otherwise, the assessment of the impacts are comparable and have not been described separately.

CONSTRUCTION

- 7.8.3. The following adverse impacts to landscape character are anticipated as a result of the construction phase of the Scheme:
- a. Vegetation clearance to facilitate construction is anticipated to occur during the initial mobilisation and subsequent phases, requiring the removal of landscape features that contribute to the vegetation cover. Additional areas of tree clearance as a result of potential safety concerns relating to the windthrow effect of vegetation removal on the fringes of woodland, particularly associated with plantation woodland. The result would be newly exposed views of the wider landscape and the construction activity therein. This impact would be permanent where it is not possible to replant, for example where vegetation is cleared for the construction of embankments. Where there is the scope for replanting, the impact would remain until vegetation has established and so be temporary.
 - b. Temporary spoil heaps, material storage, and site compounds would occur throughout the construction phase, the result would be frequent changes to the perception of the existing A1 and the broader landscape associated with the corridor.

- c. Temporary use of plant, machinery and traffic management would be conspicuous in views of the existing A1 corridor, highlighting the presence of the A1 and the changes occurring within it.
- d. Traffic management and plant movements within the corridor would temporarily increase local awareness of the existing road corridor.
- e. Construction of the new Allerdene embankment 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 the local character.
- f. Works to make changes to the existing underground gas network and construction of new above ground installation would temporarily involve plant and machinery forming new pipeline routes and above ground installation, increasing the awareness and urbanising influence on the local character.
- g. Temporary lighting associated with compounds and construction activity during the construction phase would result in the light associated with the corridor potentially spilling over into adjacent areas.
- h. Reduction in relative tranquillity as a result of the construction activity and temporarily extended influence of the road corridor.

Landscape or Landscape Related Designations

- 7.8.4. Watergate Forest Park lies approximately 600m to the west of junction 67 (Coal House) and is not anticipated to be temporarily or permanently impacted by the Scheme, with the nearest physical changes beyond 2km to the north and west.

Green belt

- 7.8.5. There would be temporary impacts on land designated as Green Belt as a result of the construction of the Scheme and the presence of temporary construction compounds which, as a result of the vegetation clearance and presence of temporary compounds, would result in a temporary reduction in the perception of openness. In particular the re-alignment of the A1 and Allerdene Bridge would extend for a construction period of three years, during which there would be a period of five months where the existing bridge would be retained whilst the proposed Allerdene Bridge is being constructed.

Conservation areas

- 7.8.6. Potential impacts on CAs have been considered within the context of their respective landscape character areas and how they contribute to a perceived sense of value or associated qualities. Specific impacts on the four CAs identified in the baseline descriptions are not considered further; impacts and effects on the setting of the designated areas are considered under **Chapter 6 Cultural Heritage** of this ES (**Application Document Reference: TR010031/APP/6.1**).

Local Landscape Character

- 7.8.7. The existing A1 corridor forms a defining landscape feature between several LLCAs. The Scheme would therefore potentially impact on the following local landscape character areas.

Local Landscape Character Area 1 – Team Valley

- 7.8.8. The majority of the modifications to the existing corridor would occur within this character area, the most significant permanent change occurring as a result of the construction of the proposed Allerdene Bridge.
- 7.8.9. A new Above Ground Installation (AGI) would be constructed and the existing AGI decommissioned and removed (see **Section 2.7.46-2.7.50** Northern Gas Network (NGN) Works). This work would take place to the north and south of the existing A1 corridor. Temporary use of plant and machinery required to undertake this work would be comparable with that used to undertake highway work but would occur at a much more localised location and scale.
- 7.8.10. The new Allerdene Bridge would take three years to construct, during this time it is anticipated that temporary construction activities would dominate this part of the character area and influence the landscape immediately to the south, adjacent to the Tyne Marshalling Yard. During the construction phase there would be substantial earth movements associated with the construction of the tie-ins to the Allerdene Bridge structure. This would require the removal of existing roadside vegetation next to the carriageway, and extensive plant movements during the formation of the modified landform.
- 7.8.11. Allerdene embankment option and Allerdene viaduct option would require a similar timeframe for construction, and as a result, the temporary impact on the perception of the landscape character and open characteristics of the Green Belt that extends throughout the character area, would remain for the duration. The impacts arising from Allerdene viaduct option are anticipated to be more extensive in their scale and nature, with additional earth movements and activity to construct the bridge supports and carriageways required in comparison to Allerdene embankment option.
- 7.8.12. The construction of the off-line section of the Allerdene Bridge would take 17 months within the previously identified three year construction phase. During this period there would be six months when the existing bridge and the new Allerdene Bridge would be present within the landscape resulting in the combined impact of the infrastructure within the north-east fringes of the wider character area.
- 7.8.13. The Kingsway Viaduct would also be subject to temporary activity in the form of plant and equipment associated with the widening of the structure for a period of 12 months, this would be contained within the context of the existing A1, albeit slightly elevated within the landscape.
- 7.8.14. To the north and south of the proposed Allerdene Bridge location, localised widening of the A1 to accommodate the offline section, would require the removal of existing roadside vegetation that currently serves to screen the carriageway and associated traffic from views to the south and west. The removal of this vegetation in the early stages of construction would result in the A1 representing a significant feature, particularly where the road is set on existing embankment. This would result in a temporary greater awareness of the corridor

and construction activity therein, which would comprise plant movements, traffic management, piling activity and the construction of retaining walls.

- 7.8.15. Immediately north of junction 66 (Eighton Lodge) of the A1 with the A167, the widening of the existing corridor would require existing slopes next to the southbound carriageway to be cleared of vegetation. This area lies immediately next to the Angel of the North; therefore, removal of nearby vegetation would result in a temporarily increased awareness of the sculpture and also the A1 from the vicinity of the structure.
- 7.8.16. Temporary impacts would also arise as a result of the formation of a construction compound immediately next to the existing A1 corridor and adjacent to the Allerdene Bridge and this would be perceived alongside the construction of the new AGI off Lamesley Road.
- 7.8.17. This is a geographically large landscape character area, the north-eastern fringes of which would be impacted on during the construction phase, particularly as a result of the removal of extensive areas of roadside vegetation and the activity to form either of the new Allerdene embankment or viaduct option. This would result in a temporary change to the character area, with ongoing modifications being readily perceptible from the gently rising ground. The character area is considered to be of **moderate sensitivity**.

Landscape Character Area 2 – Team Valley Industrial Estate

- 7.8.18. Direct changes occurring on the southern boundary to the character area during the construction phase would be confined to the clearance of vegetation on the existing verges, giving rise to newly exposed views of the A1, and the temporary construction activity associated with the formation of a retaining wall to the southbound verge. Changes would give rise to highly localised impacts to the character area within the context of the bounding feature which is the A1 itself, and would be of a relatively short duration of approximately four months, however awareness of construction activity as part of the widening would be ongoing.
- 7.8.19. Indirect impacts would occur as a result of temporary construction activity beyond the southern boundary to construct the new Allerdene Bridge and approaches. This would be in the context of the existing A1 with short duration temporary impacts confined to the southern boundary, except where substantial equipment such as piling rigs or cranes are used to construct the bridge, and which are likely to be perceived more widely within the character area. This would however be partially obscured by intervening rooflines of warehouses and offices combined with existing trees.
- 7.8.20. The removal of the existing roadside vegetation and exposure of views of traffic movements, plant and traffic management during construction would likely represent temporary impacts associated with this character area of **low sensitivity** to the type of development being considered.

Landscape Character Area 3 – Chowdene/Wrekenton Suburbs

- 7.8.21. No direct impacts would occur within the character area during the construction phase. However due to the rising landform to the north-east there is the potential for intermittent or

enclosed views throughout the character area that would include an awareness of temporary construction activity occurring to the south and in particular the 17 month period during which the off-line section of the new Allerdene Bridge is constructed. This has the potential to modify the context of the character area, highlighting the presence of the A1 corridor.

- 7.8.22. In addition, and as a result of the removal of roadside vegetation for the purpose of constructing new embankment slopes or retaining structures, there would be a heightened awareness of the A1 along the southern fringes of the character area, whereby the more open nature of the urban fringe would permit longer distance views. The landscape is considered to be of **low sensitivity**.

Landscape Character Area 4 – Springwell Rise

- 7.8.23. Direct construction impacts would occur on the boundary of the character area formed by the A1 and a point of clear transition between rural characteristics associated with this character area, which is designated as Green Belt, and the adjoining Landscape Character Area 5 – Birtley, that is predominantly urban in nature. Construction impacts would initially comprise vegetation clearance along the southbound carriageway resulting in the newly exposed views of the existing A1 corridor and the urban fringes of the adjoining Landscape Character Area 5 - Birtley, that would extend to the north-east and on rising ground. Landform would contribute to screening the construction activity, next to the existing footbridge and this would in part limit the impact associated with the vegetation clearance.
- 7.8.24. Temporary construction activity, comprising works to widen the existing carriageway would involve plant movement, traffic management and activities to replace the existing footbridge. They would occur along the entire boundary of the A1 with this landscape character area, and the boundary of the Green Belt, and include the replacement of the footbridge. Construction would also require the formation of a retaining wall, albeit within the context of the existing A1 corridor which would be largely screened to the north and the designated Green Belt by existing vegetation beyond the highway boundary.
- 7.8.25. The majority of the character area extends north-eastwards, on rising ground and rolling profile. These impacts would occur within the context of the existing A1 and on the boundary to the character area, and a landscape of **moderate sensitivity**.

Landscape Character Area 5 – Birtley

- 7.8.26. Direct construction impacts would occur on the north-east boundary of the character area, where the existing A1 is currently set on slightly higher ground as the landform gently slopes to the south and west. Temporary construction activity would require that some existing roadside vegetation is cleared to permit the widening of the northbound carriageway and replacement of the existing footbridge.
- 7.8.27. The impact of the vegetation removal and temporary construction activity would include plant movement, traffic management and replacement of boundaries and highway signs which would give rise to impacts in the immediate vicinity that would be readily perceptible.

However, the descending landform and visual containment by residential property immediately adjacent would limit the impacts from being experienced more widely within the character area.

- 7.8.28. The time scales for replacement of the existing footbridge comprise two months for removal, two months for constructing footings, and six months for above ground construction.
- 7.8.29. To the east of the overbridge carrying the A1231 over the A1 and junction 65 (Birtley) the impact of roadside vegetation clearance would be contained within broader belts of trees and shrubs and there would be no change in the wider perception of the character area as a result.
- 7.8.30. The impacts on a character area of **low sensitivity**, arising during the construction phase would be limited to the north-east boundary that is formed by the existing A1 corridor.

OPERATION

- 7.8.31. The following adverse impacts to landscape character are anticipated as a result of the Scheme during operation:
- a. Loss of woodland within the landscape that forms interim horizon lines would give rise to longer distance views across the landscape, particularly associated with the northbound verge.
 - b. Increased awareness of the existing A1 corridor beyond the immediate context, and the introduction of an additional lane of traffic movements and highway infrastructure within the landscape including new carriageway.
 - c. Existence of the new Allerdene Bridge and approaches which would be a noticeable change to a higher and a more engineered feature in the landscape.
 - d. Newly formed AGI present in the field immediately adjacent to the realigned A1 and junction 67 (Coal House).

Landscape or Landscape Related Designations

- 7.8.32. Watergate Forest Park lies approximately 600m to the west of junction 67 (Coal House) and is not anticipated to be impacted by the Scheme, with the nearest physical changes beyond 2km to the north and west.

Green Belt

- 7.8.33. The Scheme is largely associated with the existing A1 corridor, and change arising as a result of the local widening and online improvements would, with appropriate roadside mitigation avoid impacts on the qualities of the open countryside, and particularly a change in the sense of openness experienced by local residents or visitors to the area. This is of particular relevance within the transitional landscape that forms the buffer between Gateshead and Birtley, and proposed modifications to the existing A1 corridor would not be perceptible within the majority of this landscape, avoiding the urbanising impact of the road and perceptible loss in the sense of openness.

- 7.8.34. The exception to this would be the new Allerdene Bridge, Allerdene embankment option or Allerdene viaduct option are anticipated to have noticeably different associated impacts.
- 7.8.35. Allerdene embankment option would place the re-aligned A1 corridor within the northern fringes of the Green Belt designation, extending southwards the urban influence of Gateshead to the north, and within the fields to the north of Lamesley. The associated embankment would initially appear as a new, engineered slope and associated traffic would be visible on an interim horizon, crossing the bridge. The associated embankment slopes would, by the Design Year 15, have associated woodland planting established, reducing the degree to which the realigned A1 would be perceived and the associated impact on the perception of openness.
- 7.8.36. Allerdene viaduct option would place the re-aligned A1 on a similar horizontal alignment and comparable height with the Allerdene embankment option, within the northern fringes of the Green Belt designation. Allerdene viaduct option would similarly extend the urban influence of Gateshead within the existing Green Belt designation. Allerdene viaduct option would, in contrast to Allerdene embankment option, result in a stark structure, longer in length, impacting over a greater distance. Whilst this option would offer greater perception to the north of the viaduct, the supporting columns would disrupt these views and the capacity to mitigate through screen planting would be limited. The impacts associated with the re-aligned A1 and associated traffic would remain visible, the associated impacts on the perception of openness remaining to the Design Year 15 and beyond. The physical loss of green belt would be lower for Allerdene viaduct option compared to Allerdene embankment option as the footprint would be smaller. However woodland planting associated with Allerdene embankment option slopes would be more extensive and is anticipated in being more effective in softening the appearance of the embankment and screening associated traffic.
- 7.8.37. Both Allerdene embankment option and Allerdene viaduct option would result in the former A1 alignment being the subject of woodland planting to soften the appearance of the existing embankments which would remain after the existing Allerdene bridge is demolished. Whilst this would contribute to the wooded appearance of the restored landscape to the north of the A1 it would not substantially increase the sense of openness with the woodland creating a visual screen to views experienced from the southern fringes of Gateshead.
- 7.8.38. The impact of the Scheme on the Gateshead Green Belt would be a perceptible loss of designated open countryside, arising as a result of the realignment of the A1. Allerdene viaduct option would, as a result of the longer structure and visual prominence of the structure itself, result in a perceptible impact on the Green Belt. Allerdene embankment option would result in a slightly larger area of Green Belt being impacted, however the sense of openness would be restored in part by the successful establishment of associated planting on the engineered slopes, reducing the visual prominence of the realigned A1.

Conservation Areas

- 7.8.39. Potential impacts on CAs have been considered within the context of their respective landscape character areas and how they contribute to a perceived sense of value or associated qualities. Specific impacts on the four CAs identified in the baseline descriptions are not considered further; impacts and effects on the setting of the designated areas are considered under **Chapter 6 Cultural Heritage** of this ES (**Application Document Reference: TR010031/APP/6.1**).

Local Landscape Character

Local Landscape Character Area 1 – Team Valley

- 7.8.40. This character area would be subject to noticeable impacts arising as a result of the removal of roadside vegetation that had previously provided screening to the existing A1. The medium term impact being that the modified road corridor; proposed retaining walls immediately next to the carriageway; new and realigned carriageways; new AGI; and the presence of the Allerdene Bridge crossing the ECML would represent a noticeable change, particularly associated with the north-east boundary to the character area.
- 7.8.41. A readily perceptible change as a result of the Scheme would be the introduction of the new Allerdene Bridge over the ECML. For Allerdene embankment option the bridge structure, outlined in **Chapter 2 The Scheme** of this ES (**Application Document Reference: TR010031/APP/6.1**) would be supported through newly constructed embankment slopes that would broadly reflect the alignment of the existing A1 but would be set approximately 100m to the south (based on the extent of the toe of embankment slope). Allerdene embankment option bridge deck would be higher than the existing bridge deck by 3.5m.
- 7.8.42. Between the locations where the new alignment would merge with the existing embankment, the new embankment crest approaching the Allerdene embankment option would extend to 11m above the existing ground level, the engineered slopes replacing in part the existing embankments and sections of redundant road that would be broken out to allow soiling and planting to be undertaken.
- 7.8.43. Whilst Allerdene viaduct option would require embankment slopes over a shorter distance, the piers required for the construction of the viaduct would extend over a distance of 306m resulting in a substantial structure to the northern fringes of the character area. Allerdene viaduct option would represent a new and visually prominent structure that would be visible to the north east of the character area.
- 7.8.44. South of the existing Allerdene Bridge, the A1 corridor is set within extensive woodland planting. Several locations associated with the southbound carriageway would require cutting slopes to be re-graded, which following completion would initially appear as a new engineered and conspicuous slope from within the corridor. Due to the extent and mature nature of the surrounding woodland these changes would not be perceived more widely, avoiding impacts on the perception of the landscape character.

- 7.8.45. The junction of the A1 with the A167 (junction 66) involves several link roads and slip roads and would require some regrading of the existing slopes. Upon completion these slopes would appear new and unnatural however a combination of landform, existing retained roadside planting and structures would limit these changes from being perceived more broadly.
- 7.8.46. The presence of the proposed AGI would introduce an additional element within the landscape that would be out of character with the largely rural nature of the landscape to the south of the A1. Within the context of the newly formed embankment slopes the AGI would be a relatively small scale feature, the realignment of the A1 representing the more significant impact. The decommissioned and demolished AGI to the north of the A1 would represent a discrete and barely perceived impact with the boundary treatment to the site being largely unchanged.
- 7.8.47. The impacts arising as a result of the Scheme would be readily perceptible, in the absence of sections of existing roadside vegetation the awareness of moving traffic would be perceived within broader views on the rising landform to the west of the A1 and within the flatter ground to the south. The effect of this would be a sense of urbanisation of the open countryside and Green Belt policy area, particularly associated with the north-eastern fringes of the character area.
- 7.8.48. Impacts likely to arise during night time would be confined to the fringes of the character area, typically changes would be perceived with a backdrop of the rising urban landscape to the north and east, which has high levels of associated existing lighting. **Figure 7.5 Viewpoints 6, 10, 30 (Sheets 7, 13, 39)** of this ES (**Application Document Reference: TR010031/APP/6.2**) illustrate the existing night time impacts of the lighting within the character area and beyond. Within the local context of the A1 a change in the alignment and associated lighting strategy would be perceptible, with the lighting visible to the south of the existing A1. Within broader views of the character area, the proposed lighting strategy would be comparable to the existing lighting in extent and height and in its context and associations with the fringes of the urban landscape to the north. The lighting would be visible within the landscape but would be of a modern design and use Light-emitting diode (LED) lighting with directional cowls to reduce light spill. The impact of the lighting strategy would be to reduce the influence of night time lighting.
- 7.8.49. Upon completion of the Scheme, and in the following winter months, the impact on the perception of landscape character would typically be limited to the north-east boundary of the character area, with a slightly greater awareness of the corridor and associated traffic being perceived in the broader views, particularly during winter months, on a landscape character area of **moderate sensitivity**. In the absence of mitigation, impacts in the summer of the Design Year (year 15) would be comparable to those identified as occurring in the Winter Year 1. The key difference being that summer foliage within the wider landscape is likely to screen features where they may be filtered in winter months.

Landscape Character Area 2 – Team Valley Industrial Estate

- 7.8.50. Upon completion, the Scheme would give rise to barely perceptible changes at the southern fringes of the character area, sheltered by the existing built form and vegetation remaining in the landscape. It is not expected that the characteristics of the landscape character area would be removed or changed by the Scheme, as changes would occur within the existing highway corridor. It is considered that in winter year 1 and summer of design year there would be comparable impacts on the landscape of **low sensitivity**.

Landscape Character Area 3 – Chowdene/Wrekenton Suburbs

- 7.8.51. No direct impacts would occur within the character area during the initial operational phase. As outlined within the construction phase, the rising landform to the north-east has the potential for intermittent or enclosed views throughout the character area that would include an awareness of the newly constructed Allerdene Bridge to the south. This has the potential to modify the context of the character area, highlighting the presence of the A1 corridor, although the characteristics of the character area would not be modified.
- 7.8.52. The presence of the modified A1 corridor is anticipated to influence the context of the character area, heightened by the absence of the roadside vegetation.
- 7.8.53. It is considered that in winter year 1 and summer of design year there would be comparable impacts on the landscape of **low sensitivity**.

Landscape Character Area 4 – Springwell Rise

- 7.8.54. Upon completion, the vegetation removed during the construction phase would result in the exposure of the highway corridor, although the profile of the rising landform to the north-east is likely to limit the influence of the A1 corridor to the immediate location. The defining characteristics of the character area would be unchanged and the replacement footbridge would be comparable with the existing one.
- 7.8.55. The changes occurring within the context of the character area of **moderate sensitivity** would be highly localised, with the remainder of the character area being broadly unchanged.

Landscape Character Area 5 – Birtley

- 7.8.56. Immediately following the completion of the Scheme, there would be a marginal change in the features and characteristics of the northern fringes of the character area. The proposed acoustic barrier would limit the impact of the road and associated traffic and the removal of roadside vegetation, to facilitate the replacement of the footbridge, would have a marginal impact on the features of the character area. The majority of the features and characteristics of the character area of **low sensitivity** would be unchanged in the winter of year 1, and this is anticipated to remain the case in the summer of design year.

VISUAL IMPACTS

Construction

- 7.8.57. Reference should be made to **Appendix 7.1** of this ES (**Application Document Reference: TR010031/APP/6.3**) for the detailed assessment of the Scheme during the construction and operational phases. Receptor locations are identified on **Figure 7.4 Visual Effects Drawing** of this ES (**Application Document Reference: TR010031/APP/6.2**) and relevant viewpoints on **Figure 7.5 Viewpoint Photographs** of this ES (**Application Document Reference: TR010031/APP/6.2**).
- 7.8.58. The following potential adverse impacts on visual amenity are anticipated as a result of the Scheme:
- a. Vegetation removal within the existing highway boundary would result in newly exposed views of traffic, construction activity and modifications to the carriageway.
 - b. Construction associated with the AGI site would initially represent a new feature within associated receptor views.
 - c. Construction compounds would form a new, and from some locations a highly conspicuous feature within views from nearby receptors.
 - d. Construction of Allerdene Bridge across the ECML would occur adjacent to the existing bridge using large plant including cranes which would dominate local views and is likely to be distinctly noticeable in longer distance views. Allerdene viaduct option involves a longer length structure compared to the embankment option, but the timeframe for bridge construction and entire Scheme construction duration would be the same for both bridge options.
 - e. Vegetation removal would give rise to greater intervisibility between existing visual receptors with markedly different existing views, for example views between the Team Valley Industrial Estate and the largely rural outlook afforded to receptors to the south and west of the A1.

Operation

- 7.8.59. Upon completion of the Scheme and in the absence of the landscape mitigation design, potential visual impacts would arise as a result of:
- a. Newly formed embankments, including those associated with Allerdene embankment 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, particularly Allerdene viaduct option.
- 7.8.60. Impacts in the Year of Opening and in the absence of mitigation, would be comparable to those identified within **Appendix 7.1** of this ES (**Application Document Reference: TR010031/APP/6.3**). The landscape strategy, forming the primary landscape and visual

mitigation measures would not yet provide any significant contribution towards integrating the Scheme within the landscape or in screening specific features.

7.9 DESIGN, MITIGATION AND ENHANCEMENT MEASURES

- 7.9.1. Measures have been developed and designed (shown on **Figure 7.6 Landscape Mitigation Design** of this ES (**Application Document Reference: TR010031/APP/6.2**) to avoid or reduce the impacts identified as potentially arising, as detailed in **Section 7.8**.
- 7.9.2. The measures are detailed running north to south. They are referenced against chainages shown on **Figure 7.6 Landscape Mitigation Design** of this ES (**Application Document Reference: TR010031/APP/6.2**) and are categorised as embedded mitigation i.e. that which has been developed during the design process and incorporated into the design, and non-embedded mitigation i.e. developed during the assessment process to mitigate specific identified impacts.

CONSTRUCTION

- 7.9.3. Measures would be applied during construction of the Scheme, in order to reduce the magnitude and duration of impacts. These include:
- a. Areas would be cleared for construction as close as possible to works commencing and topsoiling, reseeding and planting would be undertaken during the next available season after sections of work are complete.
 - b. As far as practicable, plant and material storage areas would be sited so as to avoid landscape and visual impact.
 - c. Construction sites would be kept tidy (e.g. free of litter and debris) through robust site compound management.
 - d. Work during hours of darkness would be avoided as far as practicable and where necessary directed lighting would be used to minimise light pollution/glare. Lighting levels would be kept to the minimum necessary for security and safety.
 - e. To protect soil quality for the purposes of landscape planting, the following measures would be implemented:
 - i. Uncontaminated topsoil for re-use would be stored in un-compacted mounds at appropriate height mounds given storage conditions and stored separately from subsoil material.
 - ii. Stripped topsoil would be used in areas of similar proposed vegetation type to utilise the existing natural seed bank.
 - iii. Subsoil in planting areas would be replaced after construction and where required, ripped to a minimum of 450mm to alleviate compaction before topsoiling and planting.
 - iv. Proposed planting areas in existing arable and pasture land, subject to construction activity, would be ripped to 600mm to alleviate compaction, where required.
 - f. Construction would be managed such that the loss of any existing woodland, scrub, heath, grassland vegetation, and isolated trees and shrubs not affected by the permanent

works is avoided as far as practicable. The detailed Arboricultural Report for the Scheme can be viewed within **Appendix 7.2** of this ES (**Application Document Reference: TR010031/APP/6.3**).

- g.** All existing trees and shrubs not affected by the construction of the permanent works would be fenced off with a suitable type of temporary fencing in accordance with BS5837. Fencing would be erected prior to construction activities in that area and would remain for the entire construction period in that area.

OPERATION

Embedded Mitigation

7.9.4. Embedded mitigation has been developed through the design process and forms an integral part of the design of the Scheme. Embedded mitigation is aimed at reducing potential impacts:

- a.** Between **chainage 325 and 540** (approximately) the existing environmental barrier would be retained throughout the works, which would avoid changes to the outlook of adjacent properties to the south.
- b.** At a number of locations, slopes have been retained at 1:2.5 profile – avoiding the need for newly formed slopes and maintaining, where appropriate, the existing vegetation, thus reducing the effect of newly formed engineered slopes.
- c.** The proposed Allerdene embankment option and Allerdene viaduct option have been subject to a design process aimed at providing a structure that acknowledges its potential impacts on the wider landscape as a prominent new structure. This has included consideration of the overall height and form that the bridge takes.
- d.** The replacement lighting strategy would cover the same extents to the existing lighting and be similar in height but will be of a modern design. It will use LED lighting and be directional with cowls to reduce light spill. The impact of the lighting strategy will be to reduce the impact of night time lighting.

Specific Mitigation Measures

7.9.5. In addition to the embedded mitigation a number of further specific measures relating to landscape and/or visual effects have been identified during the assessment phase, these include:

- a.** Between **chainage 325 and 785** southbound, vegetation that provides an existing screen to development to the north would be retained and protected during the construction of the adjacent retaining wall. Scattered trees would be planted to reinforce the existing vegetation which forms a visual screen to the south of the Landscape Character Area 1 – Team Valley and screens adjacent visual receptors.
- b.** The area between **chainage 1010 and 1700**, and encompassing the northbound and southbound verges, the newly constructed embankment slopes would be subject to an extensive planting strategy. The planting strategy would aim to provide screening of the

newly aligned carriageway from nearby visual receptors and provide integration to the wider landscape framework, reflecting existing landscape patterns.

- c. South-east of junction 67 (Coal House), planting to the boundary of the proposed AGI site would be required to soften the appearance and reduce potential impacts on the adjoining open countryside and visual receptors to the south and south-west.
- d. Further measures, in the form of woodland planting would be provided south of Allerdene embankment option (**chainage 1700 to 2320**), aimed at integrating the Scheme with the adjacent woodland setting of the existing A1 corridor. This would be achieved through the planting of a woodland edge type mix, designed to reflect local vegetation patterns and species, and applied to both cutting and embankment slopes where existing woodland is removed as a result of the Scheme.
- e. Between **chainage 2320 and 2540** and adjacent to the southbound carriageway, the proposed cutting slope would be subject to woodland edge planting, with some focused planting of scattered trees. This would allow for a greater awareness of the Angel of the North sculpture, providing a focal point in views from the A1 corridor.
- f. Within and on the approaching slip roads to junction 66 (Eighton Lodge) of the A1 with the A167 (**chainage 2560 to 3220**), replacement woodland would be provided to mitigate the impact associated with the proposed changes to the adjoining slopes as a result of the widening of the existing carriageways. This would take the form of native planting appropriate to the location and comprising species that reflect the surrounding vegetation to aid integration.
- g. Between **chainage 3300 and 3700** and adjacent to the southbound carriageway, woodland edge planting of native species would be provided to tie the modifications to the landform into the adjacent landscape and vegetative framework.
- h. As a result of local widening and replacement of the footbridge between **chainage 3800 and 4120**, the Scheme would provide a replacement hedgerow with intermittent trees to re-form the existing boundary removed during construction. This would provide screening to the adjoining landscape character and reinstate the visual boundaries to the adjacent Landscape Character Area 5 – Birtley. Specifically, this would also restore the views from several visual receptors that occupy a location on rising ground to the north and which have some views to the south and west towards the A1 corridor.

Enhancement Measures

7.9.6. A number of locations have been identified as potentially offering opportunities to improve or enhance the landscape within the highway boundary, in line with the Highways England's licence to achieve environmental improvements, enhancements and long term development of the network, through its projects:

- a. Within the area of existing woodland off Banesley Lane and east of the existing housing, the Scheme would, within the confines of the highway boundary, undertake management work and replanting to improve the quality of the woodland and its capacity to provide screening to the A1 corridor. This would take the form of felling dead or diseased

material, to be dealt with appropriately and replanting using appropriate species as standard or feathered trees.

- b.** East of the Allerdene embankment option (**chainage 1460 to 1520**), the planned attenuation pond would be enhanced through additional tree planting and areas of scrub to provide improved habitat connectivity and enhanced appearance to the Scheme within views from the A1.
- c.** South of the Angel of the North sculpture, existing woodland planting within the highway soft estate between **chainage 2560 to 2780**, would be the subject of woodland enhancement measures, this would include thinning operations and pruning in order to provide greater visibility of the sculpture in views from the A1 corridor and more widely within the surrounding landscape.

7.10 ASSESSMENT OF LIKELY SIGNIFICANT EFFECTS

LANDSCAPE CHARACTER

Construction

- 7.10.1. The assessment has identified potential effects to five local landscape character areas, predicted to occur as a result of impacts during the construction period. In the absence of specific measures, over and above those identified in **Section 7.9.3**, to mitigate construction impacts the assessment of the impacts and resulting effects are informed by the impacts outlined in **Section 7.8 Potential Impacts**.

Local Landscape Character Area 1 – Team Valley

- 7.10.2. Temporary impacts would occur as a result of vegetation removal within the existing highway corridor and beyond to facilitate the construction of embankment slopes, structures and modifications to the existing road layout. The effect of these temporary impacts would be a noticeable change in the northern fringes of the character area, with plant, associated construction activity, including site compounds extending the urban influences that exist to the north.
- 7.10.3. The formation of the permanent embankment slopes and construction of either Allerdene embankment or Allerdene viaduct option would represent a conspicuous new feature.
- 7.10.4. The impacts outlined above would result in a **moderate adverse** magnitude of impact in the construction period, which on a landscape of **moderate** sensitivity would result in a **moderate adverse** significance of effect.

Landscape Character Area 2 – Team Valley Industrial Estate

- 7.10.5. Construction activity occurring on the southern fringes of the character area would be temporary and be contained by warehouse type buildings to the north, as a result the temporary magnitude of impact would be **minor**. The effect of these changes on the character area, that is considered to be of **low** sensitivity would be **slight adverse** (not significant).

- 7.10.6. There is the potential for awareness during the construction stage of the activity within the character area however this would be temporary and short in duration and is not anticipated to represent a significant effect.
- 7.10.7. The impacts outlined above would result in a **minor adverse** magnitude of impact in the construction period, which on a landscape of **low** sensitivity would result in a **slight adverse** (not significant) significance of effect.

Landscape Character Area 3 – Chowdene/Wrekenton Suburbs

- 7.10.8. No direct impacts would occur within the character area, although there remains the potential for awareness of activity to occur as a result of the rising landform providing opportunities for broader awareness and for activity to influence the perception of landscape character.
- 7.10.9. The impacts outlined above would result in a **negligible adverse** magnitude of impact in the construction period, which on a landscape of **low** sensitivity would result in a **slight adverse** (not significant) significance of effect.

Landscape Character Area 4 – Springwell Rise

- 7.10.10. The effect of the changes occurring along the southern boundary of the character area would be an increased awareness of the A1 corridor and changes occurring therein with an increased influence of the corridor on the immediate landscape that diminishes as the landform rises.
- 7.10.11. The impacts outlined above would result in a **minor adverse** magnitude of impact in the construction period, which on a landscape of **moderate** sensitivity would result in a **slight adverse** (not significant) significance of effect.

Landscape Character Area 5 – Birtley

- 7.10.12. The effects associated with the works, including the removal of some existing roadside vegetation, occurring to the north-east boundary to the character area would be of short to medium duration and would be confined to the immediate area that currently has an awareness of the highway corridor. A combination of the descending landform and existing built form limiting the extent to which the resulting effects would be perceived.
- 7.10.13. The impacts outlined above would result in a **minor adverse** magnitude of impact in the construction period, which on a landscape of **low** sensitivity would result in a **slight adverse** (not significant) significance of effect.

Operation

- 7.10.14. The following sections detail the potential significant effects during the operational phase on the five local landscape character areas as a result of the Scheme, during the winter in the year of opening and summer in design year.

Local Landscape Character Area 1 – Team Valley

Winter – Year of Opening

- 7.10.15. Permanent and noticeable change would occur along the northern fringes of this character area as a result of the Scheme. This would arise as a result of the impact associated with changes to the existing carriageways, the loss of existing roadside vegetation, newly constructed AGI, and of the completion of the proposed Allerdene Bridge over the ECML. The resulting magnitude of impact would be moderate adverse as the new features of the corridor would appear more noticeable within the landscape, particularly affecting the landscape immediately to the south.
- 7.10.16. The options for the construction of the Allerdene crossing of the ECML would not give rise to perceptible differences in the findings of the assessment of effects. The elevated nature of the carriageways would form the most noticeable change, however Allerdene viaduct option would have more structures associated with it and in the immediate landscape would be more conspicuous as a result of the structures being more extensive in nature resulting in a noticeable impact.
- 7.10.17. Impacts associated with the changes to the carriageways, junctions and local roads would represent less perceptible changes and the short to medium term effects from these would be highly localised.
- 7.10.18. Upon completion of the Scheme, that would include Allerdene embankment option, the impacts generally being of short to medium duration with the exception of the Allerdene Bridge over the ECML and proposed AGI which would be perceived as permanent changes. Given the extensive nature of the character area, the impacts would occur along the northern fringes of the landscape character area of moderate sensitivity.
- 7.10.19. The impacts associated with Allerdene embankment option and outlined above would result in a **minor adverse** magnitude of impact in the winter of the opening year, which on a landscape of **moderate** sensitivity would result in a **slight adverse** (not significant) significance of effect.
- 7.10.20. The impacts associated with Allerdene viaduct option and outlined above would result in a **moderate adverse** magnitude of impact in the winter of the opening year, which on a landscape of **moderate** sensitivity would result in a **moderate adverse** significance of effect.

Summer Design Year

- 7.10.21. The establishment of the measures outlined in **Section 7.9** would give rise to a reduction in the impacts as proposed planting matures, and integrates the Scheme into the broader landscape setting and with this locality within the character area. The restoration of the majority of the existing features, including the establishing planting strategy would result in a negligible magnitude of impact and permanent effects that are at the lower end of significance.

- 7.10.22. The character area would remain subject to a permanent effect resulting from the influence that the proposed Allerdene Bridge and proposed AGI immediately adjacent to the south would have on the landscape, and particularly the area immediately to the south, on the flatter landscape extending west of the Tyne Marshalling Yard. Awareness of the changes arising from the Scheme would be less noticeable to the broader character area on rising ground, the Scheme being generally perceived within and along a similar alignment to the existing A1 corridor.
- 7.10.23. Allerdene embankment option would allow planting to extend up to the edge of the proposed bridge structure, the effect of this would be to reduce the perceived length of the Scheme, restore in part the existing landscape features, having the effect of integrating this feature of the Scheme into the landscape. This would have the effect of broadly replicating the features that exist along the northern edge of the character area.
- 7.10.24. Allerdene viaduct option would, as a result of the more expansive structure associated with the viaduct remain more prominent within the landscape. The opportunity to mitigate through planting is reduced and the effects identified following completion of the Scheme would remain.
- 7.10.25. The Scheme including Allerdene embankment option, would result in a magnitude of impact that would reduce slightly from that anticipated to occur immediately following completion.
- 7.10.26. The impacts associated with Allerdene embankment option and outlined above would result in a **negligible adverse** magnitude of impact in the summer of the design year, which on a landscape of **moderate** sensitivity would result in a **slight adverse** (not significant) significance of effect.
- 7.10.27. The impacts arising as a result of Allerdene viaduct option would remain a permanent change, the effect being to modify slightly the perception of the landscape having a wooded edge associated with the A1 over a larger area and distance to the south and west.
- 7.10.28. The impacts associated with Allerdene viaduct option and outlined above would result in a **moderate adverse** magnitude of impact in the summer of the design year, which on a landscape of **moderate** sensitivity would result in a **moderate adverse** significance of effect.

Landscape Character Area 2 – Team Valley Industrial Estate

Winter Year of Opening

- 7.10.29. Changes occurring within the character area would be confined to a short section (approximately 320m) of the A1, where a newly constructed retaining wall and clearance of vegetation during the construction phase would result in a barely perceptible change in the southern boundary.
- 7.10.30. The warehouses and office blocks immediately to the north would limit the effect of these highly localised changes associated with the boundary of the character area, the A1

carriageway, traffic movements and retaining wall as they are comparable with the existing features.

- 7.10.31. Post construction the widened Kingsway Viaduct would not represent a noticeable change in the perception of the local landscape character. Of greater impact would be the indirect impacts associated with the Allerdene Bridge, approximately 250m to the south-east boundary of the character area. This new structure would be visible within intermittent views from the southern areas within the character area, and in the absence of foliage during the winter months. The changes to the alignment of the A1, with newly formed embankments would not represent a substantial change to the features on the southern fringes of the character area.
- 7.10.32. Effects likely to arise during night time would be confined to the southern fringes of the character area, typically changes would be perceived within the context of the extensive lighting connected with the Team Valley industrial estate which has high levels of associated existing lighting. The proposed replacement lighting strategy for the Scheme would be comparable to the existing lighting in extent and height but would be of a modern design. It would use LED lighting and be directional with cowls to reduce light spill. The impact of the lighting strategy would be to reduce the impact of night time lighting.
- 7.10.33. The impacts associated with Allerdene embankment option and outlined above would result in a **minor adverse** magnitude of impact in the winter of the opening year, which on a landscape of **low** sensitivity would result in a **slight adverse** (not significant) significance of effect.
- 7.10.34. The impacts associated with Allerdene viaduct option and outlined above would result in a **minor adverse** magnitude of impact in the winter of the opening year, which on a landscape of **moderate** sensitivity would result in a **slight adverse** (not significant) significance of effect.
- Summer Design Year
- 7.10.35. Following the re-establishment of the landscape framework of the modified A1 corridor, effects associated with the retaining wall would be mitigated, reducing the immediate awareness of the limited changes along the southern boundary.
- 7.10.36. Previously identified effects associated with the Allerdene Bridge to the south of the character area would be substantially reduced, through the modifications to the slope profiles, and substantial planting proposed to extend across the face of the embankment slope next to the southbound carriageway. Although set perceptibly higher within the landscape the features of the landscape would be closely replicated, reducing the potential effects on the perception of the landscape.
- 7.10.37. Changes occurring to and immediately beyond the southern boundary to the landscape character area would, in the design year not give rise to a perceptible change in the characteristics of the landscape character area. The resulting magnitude of impact would be

no change on a landscape of **low** sensitivity and the resulting significance of effect would be **neutral** (not significant).

- 7.10.38. The impacts associated with Allerdene embankment or viaduct option outlined above would result in a **no change** magnitude of impact in the summer of the design year, which on a landscape of **moderate** sensitivity would result in a **slight adverse** (not significant) significance of effect.

Landscape Character Area 3 – Chowdene/Wrekenton Suburbs

Winter Year of Opening

- 7.10.39. No physical changes would occur to the character area and upon completion of the Scheme, and in the initial winter period, the only changes that would be readily perceptible would be the newly constructed Allerdene Bridge set approximately 160m from the southern boundary. The slightly taller embankment approach from the north towards the bridge would place the A1 and associated traffic slightly higher within the landscape, making traffic movements slightly more perceptible from views within the character area. As the landform rises to the north-east Allerdene embankment option would, in the absence of foliage on the trees within the intervening landscape, be perceptible within winter views.
- 7.10.40. The effect of Allerdene viaduct option would be comparable despite the viaduct structures potentially remaining visible from higher ground and exerting some influence beyond the remnants of the existing A1 alignment.
- 7.10.41. Effects likely to arise during night time would be confined to the adjacent character area with isolated lighting points set against the largely dark landscape with the exception of where views of the lighting within the Tyne Marshalling Yard represent existing light sources. The proposed lighting strategy would be comparable to the existing lighting in extent although perceived at a higher elevation. The lighting would be of a modern design. It would use LED lighting and be directional with cowls to reduce light spill. The effect of the Scheme's lighting strategy would be to reduce the impact of night time lighting.
- 7.10.42. The presence of the Allerdene Bridge, elevated approaches and the rising landform associated with the character area has the potential for minor changes to be perceptible within constrained or intermittent views from within the character area, raising the presence of the A1 within the context of the landscape character.
- 7.10.43. The impacts associated with Allerdene embankment or viaduct option outlined above would result in a **minor adverse** magnitude of impact in the winter of the year of opening, which on a landscape of **low** sensitivity would result in a **slight adverse** (not significant) significance of effect.

Summer Design Year

- 7.10.44. Following the establishment of the landscape strategy, awareness of the Allerdene Bridge and associated slopes or structures identified as being perceptible from the southern fringes of the character area, would be partially mitigated through planting. While the new bridge

structure itself would be perceptible the embankment formed by Allerdene embankment option would be planted within extensive woodland and shrubs. The effect of this would be to substantially reduce the awareness of traffic using the A1, limiting it to the crossing of the Allerdene Bridge structure itself.

7.10.45. The viaduct piers associated with Allerdene viaduct option would be more apparent in the landscape, although the planting associated with the former A1 carriageway would limit awareness and in part restore features of the landscape.

7.10.46. No direct changes would occur within the character area and the majority of effects identified as arising in the year of opening would be substantially reduced for both bridge options. The impacts associated with Allerdene embankment or viaduct option outlined above would result in a **negligible adverse** magnitude of impact in the summer of the design year, which on a landscape of **low** sensitivity would result in a **neutral** (not significant) significance of effect.

Landscape Character Area 4 – Springwell Rise

Winter Year of Opening

7.10.47. Following completion of the Scheme, some change would be perceptible along the south-west boundary to the character area as a result of, vegetation clearance, widening of the southbound carriageway and re-forming of cutting and embankment slopes to reflect the local landform. These would represent a barely perceptible change to the landscape character area given the descending landform to the south-west, with the majority of the character area unaffected.

7.10.48. The newly constructed footbridge would replace the existing structure and with the exception of slightly longer approaches on the ramps would not form a new and significant feature. Neither would the local extension to the Longbank Bridleway underbridge, which set below the A1, would be a relatively discreet change.

7.10.49. The formation of the proposed retaining wall between **chainage 4115 and 4410** would be set into the descending slope and on the boundary to the character area, given its context within the existing A1 corridor, the associated effects would be barely perceptible to the wider character area.

7.10.50. The combined effect of the vegetation removal and re-forming of the cutting and embankment slopes would give rise to a slight increase in the awareness and inter-visibility with the adjoining character area (Landscape Character Area 5 – Birtley) to the south-west, although the descending and curved nature of the landform would limit broader inter-visibility between the two areas.

7.10.51. Effects likely to arise during night time would be confined to the southern fringe of the character area, typically changes would be perceived with a backdrop of the urban landscape that comprises Birtley and awareness of the Tyne Marshalling Yard on lower ground within the Team Valley. **Figure 7.5 Sheet 31** of this ES (**Application Document Reference: TR010031/APP/6.2**) illustrates the existing night time effect of the lighting within

the character area and beyond. The proposed lighting strategy would be comparable to the existing lighting in extent and height but would be of a modern design. It would use LED lighting and be directional with cowls to reduce light spill. The effect of the Scheme's lighting strategy would be to reduce the potential for change on the night time lighting.

- 7.10.52. The impacts associated with Allerdene embankment or viaduct option outlined above would result in a **negligible adverse** magnitude of impact in the winter of the year of opening, which on a landscape of **moderate** sensitivity would result in a **slight adverse** (not significant) significance of effect.

Summer Design Year

- 7.10.53. Planting along the revised highway boundary would in the design year re-establish the existing outgrown hedge that currently exists. This would have the effect of restoring the visual screen along the south-west boundary to the character area, tying the retained vegetation together and reducing the perception of change on the open nature of the character area that extends to the north and east.
- 7.10.54. Replacement planting would also reduce the inter-visibility between this character area and the adjacent Landscape Character Area 5 – Birtley, restoring the defined edge between the two distinct areas.
- 7.10.55. The impacts associated with Allerdene embankment or viaduct option outlined above would result in **no change** magnitude of impact in the summer of the design year, which on a landscape of **moderate** sensitivity would result in a **neutral** (not significant) significance of effect.

Landscape Character Area 5 – Birtley

Winter Year of Opening

- 7.10.56. Upon completion of the Scheme, there would be barely perceptible changes associated with the north-east boundary to the character area. The most perceptible changes would be the erection of an acoustic barrier within the existing verge, the replacement footbridge and the removal of some roadside vegetation to facilitate these changes.
- 7.10.57. The majority of the character area would, as a result of the built form immediately next to the changes and the descending and rolling nature of the landform, be unaffected. The A1 corridor remaining a relatively discreet feature on the north-east boundary of the character area.
- 7.10.58. Effects likely to arise during night time would occur within the context of the existing A1, the urban edge of Birtley and local roads which have high levels of associated lighting. **Figure 7.5 Sheets 16 and 23** of this ES (**Application Document Reference: TR010031/APP/6.2**) illustrate the typical existing night time effects of the lighting within the character area. The proposed lighting strategy would be comparable to the existing lighting in extent and height. The lighting would be of a modern design, using LED lighting and use directional light, with

cows to reduce light spill. The effect of the lighting strategy would be to reduce the perception of change in night time lighting.

- 7.10.59. The impacts associated with Allerdene embankment or viaduct option outlined above would result in a **negligible adverse** magnitude of impact in the winter of the year of opening, which on a landscape of **low** sensitivity would result in a **neutral** (not significant) significance of effect.

Summer Design Year

- 7.10.60. The minor changes occurring on the north-east boundary to the character area would not materially affect the perception of the wider character area. The acoustic barrier would remain, providing a visual screen to traffic movements and limiting the impact associated with the A1.
- 7.10.61. The establishment of a linear belt of shrubs and trees between **chainage 3960 and 4265**, would in the design year provide a reinforced boundary to the character area, defining the limit of the landscape character area.
- 7.10.62. The impacts associated with Allerdene embankment or viaduct option outlined above would result in a **no change** magnitude of impact in the summer of the design year, which on a landscape of **low** sensitivity would result in a **neutral** (not significant) significance of effect.

Summary

- 7.10.63. The assessment of effects of the Scheme on landscape character has concluded that significant effects would occur on a single landscape character area, Landscape Character Area 1 - Team Valley. The assessment identified that significant effects would arise as a result of the construction of the Allerdene embankment or the Allerdene viaduct option. Following construction and subsequent operational phase, the Allerdene viaduct option would continue to give rise to a significant effect. Significant effects are identified below in **Table 7-13**.

Table 7-13 – Significant landscape character effects

Landscape Character Area	Sensitivity	Significance of Effect (Allerdene embankment option)			Significance of Effects (Allerdene viaduct option)		
		Construction	Winter Year of Opening	Summer Design Year	Construction	Winter Year of Opening	Summer Design Year
Landscape Character Area 1 – Team Valley	Moderate	Moderate adverse	Slight adverse (not significant)	Slight adverse (not significant)	Moderate adverse	Moderate adverse	Moderate adverse

VISUAL AMENITY

Construction

- 7.10.64. Reference should be made to **Appendix 7.1** of this ES (**Application Document Reference: TR010031/APP/6.3**) for the detailed assessment of the Scheme during the construction phase. Receptor locations are identified on **Figure 7.4 Visual Effects Drawing** of this ES (**Application Document Reference: TR010031/APP/6.2**) and relevant viewpoints on **Figure 7.5 Viewpoint Photographs (Application Document Reference: TR010031/APP/6.2)**.

Residential

- 7.10.65. Almost six hundred (597 no.) individual residential receptors have been identified as being likely to be subject to a modification of their outlook as a result of the construction of the Scheme. Of these, 44 no. would be subject to a magnitude of impact that would give rise to a **large adverse** significance of effect; a further 191 no. would be subject to a significant effect but at the lower significance of **moderate adverse**. Where significant effects are identified as being likely to arise these typically occur where vegetation would be removed by the Scheme, exposing views that are currently screened. The proposed site compounds and the replacement of North Dene footbridge have the potential to be visible from a substantial number of local receptors during the construction phase.
- 7.10.66. Within the remaining 362 no. receptors the magnitude of impact would be **negligible** and/or **minor** and would give rise to a **slight adverse** or **neutral** (not significant) effect. Changes in views are either distant or a relatively small element within a broader view.

Rights of Way

- 7.10.67. A total of 23 no. PRow have been identified as being within the Study Area and potentially subject to impacts and effects as a result of the Scheme. Several of these have been split down along their length to identify where views of the Scheme are likely to be achieved.
- 7.10.68. Of the 23 no. PRow, 13 would be subject to a significant effect of **moderate adverse** or greater, and of these, four would be subject to the higher significance of effect rating of **large adverse**. These typically occur during construction where PRow pass immediately adjacent or in some cases are directly impacted by the proposed construction compound and would be subject to a major or moderate magnitude of impact as a result.
- 7.10.69. The remaining ten PRow would be subject to a magnitude of impact of **minor** or **negligible adverse** (not significant).

Other Receptors

- 7.10.70. Additional receptors that do not represent residential development or footpaths have been identified, these range in their nature from woodland areas that form local resources to company property and commercial outlets. Of the 17 receptor locations, eight would be subject to a significant adverse effect but all would be at the lower end of the scale being **moderate adverse**. These commonly occur within relatively close proximity to the existing

A1 corridor where a combination of works to the highway and/or associated construction compounds would represent a significant change in their outlook.

- 7.10.71. The remaining nine receptor locations would be subject to a **slight adverse** (not significant) effect or have been identified as not having a view due to boundary vegetation, orientation or distance.

Highways

- 7.10.72. Views experienced from local roads would vary according to the direction of travel, proximity to the Scheme and the intervening landform combined with the framework of woodland, hedgerows and individual trees. Views experienced from within a vehicle typically providing fleeting or transitory views, interrupted frequently by existing landscape features and have been assessed in line with the methodology set out in **Section 7.4** Assessment Methodology.
- 7.10.73. For three of the highway corridors, **moderate adverse** effects have been identified; while the relative sensitivity to the Scheme is **low**, impacts would in places occur in close proximity and would therefore give rise to a **major adverse** magnitude of impact, giving rise to a **moderate adverse** effect.
- 7.10.74. For the remainder of the highway corridors views are more distant and the potential for substantial views of the Scheme during construction are fewer and likely to give rise to a **negligible** or **minor adverse** magnitude of impact. As a result, the significance of effect is likely to be no greater than **slight adverse** (not significant).
- 7.10.75. Receptor locations are identified on **Figure 7.4 Visual Effects Drawing** and relevant viewpoints on **Figure 7.5 Viewpoint Photographs** of this ES (**Application Document Reference: TR010031/APP/6.2**).
- 7.10.76. Significant effects arising as a result of the construction phase of the Scheme, on the above receptor types are identified below in **Table 7-14**.

Table 7-14 - Significant visual effects during construction

No.	Viewpoint (Relevant)	Location (address)	Minimum Distance to Scheme	Sensitivity	Magnitude of Impact	Significance of Effects
R7	4	Lamesley Road: North Farm, 1-4 The Courtyard	320m	Sensitivity: High	Construction: Major Adverse	Large adverse
R8	6	Lamesley Road: 4-6 The Cottages, The Vicarage, Temple Meads	450m	Sensitivity: High	Construction: Major Adverse	Large adverse
R10	N/A	Lamesley Road: South Farm House, The Granary, The Stables, The Dairy	600m	Sensitivity: High	Construction: Moderate Adverse	Moderate adverse
R15	11	Newcastle Bank: 11-15	170m	Sensitivity: High	Construction: Moderate Adverse	Moderate adverse
R16	12	Long Bank: 31-39	70m	Sensitivity: High	Construction: Moderate Adverse	Moderate adverse
R17	N/A	Long Bank: 41	50m	Sensitivity: High	Construction: Moderate Adverse	Large adverse
R18	13	North Dene: 62-72, 85-111	50m	Sensitivity: High	Construction: Moderate Adverse	Moderate adverse
R19	N/A	North Dene: 34-60, 35-47, 57-67, 74-84, 94-106	50-150m	Sensitivity: High	Construction: Moderate Adverse	Moderate adverse
R20	15	Dene Court: 45 Duart Crathie: 16-20, 42-49, 52	40m	Sensitivity: High	Construction: Moderate adverse	Moderate adverse
R21	N/A	Crathie: 1-3, 6-15, 21-24, 26-41, 50-51 Malone Gardens: 16-18	40-140m	Sensitivity: High	Construction: Minor adverse	Moderate adverse
R24	N/A	Northside: 1-4, 6, Hampton House, Willow Croft	20m	Sensitivity: High	Construction: Major adverse	Large adverse
R27	N/A	Southview	40m	Sensitivity: High	Construction: Moderate adverse	Moderate adverse
R28	19	Northside Farm	100m	Sensitivity: High	Construction: Moderate adverse	Moderate adverse
R29	19	Kirschberg	130m	Sensitivity: High	Construction: Moderate adverse	Moderate adverse

No.	Viewpoint (Relevant)	Location (address)	Minimum Distance to Scheme	Sensitivity	Magnitude of Impact	Significance of Effects
R31	20, 21	Dunkirk Farm	420m	Sensitivity: High	Construction: Moderate Adverse	Moderate adverse
R34	25	Low Eighton: Eighton Lodge, Dene House, Longacre Cottage, The Hawthorns	100m	Sensitivity: High	Construction: Moderate Adverse	Moderate adverse
R38	27	Woodford: 59-68, 96-111	220m	Sensitivity: High	Construction: Moderate Adverse	Large adverse
R39	28	Salcombe Gardens: 79-93	140m	Sensitivity: High	Construction: Moderate Adverse	Moderate adverse
R40	28	Salcombe Gardens: 61-77	140m	Sensitivity: High	Construction: Moderate Adverse	Moderate adverse
P1c	10	Great North Forest Heritage Trail Lamesley Road to Newcastle Bank: Lamesley 72(br)#2 - 400m length	200m	Sensitivity: High	Construction: Moderate Adverse	Moderate adverse
P1d	20	Great North Forest Heritage Trail Long Bank to Dunkirk Farm: Lamesley 72(br)#2, Birtley 30 - 700m length	0m	Sensitivity: High	Construction: Major Adverse	Large adverse
P3	4	Lamesley 1- 450m length	60m	Sensitivity: High	Construction: Moderate Adverse	Large adverse
P10	N/A	Birtley 18 - 280m length	100m	Sensitivity: High	Construction: Moderate Adverse	Moderate adverse
P11	N/A	Birtley 5 - 630m length	50m	Sensitivity: High	Construction: Moderate Adverse	Moderate adverse
P15	14, 19	Birtley 16 - 115m length	0m	Sensitivity: High	Construction: Moderate adverse	Large adverse
P16	20	Birtley 23 - 180m length	330m	Sensitivity: High	Construction: Minor Adverse	Moderate adverse
P17	N/A	Lamesley 43 - 450m length	50m	Sensitivity: High	Construction: Moderate Adverse	Moderate adverse
P18	21	Lamesley 63 - 500m length	90m	Sensitivity: High	Construction: Moderate Adverse	Moderate adverse
P19	20, 21	Lamesley 46 - 700m length	400m	Sensitivity: High	Construction: Moderate Adverse	Moderate adverse

No.	Viewpoint (Relevant)	Location (address)	Minimum Distance to Scheme	Sensitivity	Magnitude of Impact	Significance of Effects
P20	N/A	Lamesley 40#1 - 120m length	120m	Sensitivity: High	Construction: Major adverse	Large adverse
P21	25	Lamesley 40#2 - 60m length	160m	Sensitivity: High	Construction: Moderate adverse	Moderate adverse
P22	23	Lamesley 69#1 - 450m length	280m	Sensitivity: High	Construction: Moderate Adverse	Moderate adverse
P23	N/A	Gateshead 7 - 120m length	130m	Sensitivity: High	Construction: Moderate Adverse	Large adverse
O4	4	Horseworld Shop	140m	Sensitivity: Low	Construction: Major Adverse	Moderate adverse
O5	N/A	St Andrew's Church	550m	Sensitivity: Moderate	Construction: Moderate Adverse	Moderate adverse
O7	N/A	Hot Tub Hideaway Hotel	600m	Sensitivity: Moderate	Construction: Moderate Adverse	Moderate adverse
O8	18	Angel of the North Fishing Lakes	60m	Sensitivity: High	Construction: Moderate Adverse	Moderate adverse
O9	N/A	Bowes Incline Hotel	30m	Sensitivity: Moderate	Construction: Major Adverse	Moderate adverse
O10	N/A	Bowes Manor Equestrian Centre	110m	Sensitivity: Moderate	Construction: Moderate Adverse	Moderate adverse
O14	26	Angel of the North	110m	Sensitivity: High	Construction: Minor Adverse	Moderate adverse
O15	8	Longacre Wood	40m	Sensitivity: High	Construction: Moderate Adverse	Moderate adverse
H1	4, 6	Lamesley Road - 510m length	50m	Sensitivity: Low	Construction: Major Adverse	Moderate adverse
H2	7	Smithy Lane - 470m length	200m	Sensitivity: Low	Construction: Major Adverse	Moderate adverse

OPERATION

Winter Year of Opening

Residential

- 7.10.77. Upon completion of the Scheme and reinstatement of the construction compounds, effects at the upper end of significance (**large adverse**) are predicted to have reduced, although significant effects are still predicted to arise, these would occur at the lower end of the scale, being **moderate adverse**. The total number of individual receptors, associated with three locations, identified as being subject to a significant effect would be eleven.
- 7.10.78. The majority of visual receptors identified during the assessment phase would be subject to impacts at the lower end of the scale of magnitude. As a result, the significance of effect would be **slight adverse** (not significant) for 110 no. receptors and **neutral** (not significant) for 365 no. receptors. Upon completion of the construction phase, views for many of the receptors would be comparable with those currently experienced, and particularly for those with longer distance views.
- 7.10.79. A small number of receptors located along the northern edge of Birtley would, as a result of the construction of an acoustic barrier be subject to an improvement in their outlook in combination with the retention of existing planting within and next to the verge, the footbridge ramps, carriageway and traffic being largely screened from the majority of ground floor views, resulting in a significance of effect of **slight beneficial** (not significant).
- 7.10.80. The assessment has therefore concluded that upon completion of the Scheme the visual effect on residential views would be **not significant**, with only a small number of visual receptors being subject to a moderate adverse effect, the majority of visual receptors being subject to effects no greater than slight adverse.

Rights of Way

- 7.10.81. Of the 23 no. PRow identified as having a view of the Scheme, all but one (Right of Way P3) would not be subject to a significant effect. Receptor P3 would be subject to an effect of **moderate adverse**, arising as a result of it affording near distance views of the changes associated with the widening of the Kingsway Viaduct, associated vegetation loss, and presence of the proposed AGI. At the eastern end of PRow P3, the views east towards the Allerdene embankment option would change where the alignment would place it in a more direct line of sight.
- 7.10.82. The remaining PRows would be subject to effects ranging between **slight adverse** and **neutral** (not significant).
- 7.10.83. The assessment has therefore concluded that upon completion of the Scheme the visual effect on views from PRow would be not significant, with only a single PRow being subject to an effect of moderate adverse.

Other Receptors

- 7.10.84. All but one of the receptors identified as being a non-residential or right of way receptor would be subject to an effect that is not considered to be significant. A location in Longacre Wood (O15, refer to **Figure 7.4 Visual Effects Drawing** of this ES (**Application Document Reference: TR010031/APP/6.2**)) would be subject to a moderate adverse magnitude of impact arising as a result of the removal of roadside vegetation to facilitate the construction of a new embankment. Following completion of the Scheme the outlook at this location would remain subject to a substantial change and the effect would be **moderate adverse** and is considered significant.

Highways

- 7.10.85. Upon completion of the Scheme, all highway receptor locations identified within the assessment would be subject to visual effects no greater than **slight adverse**, with the majority subject to an effect of **neutral** (not significant).
- 7.10.86. Receptor locations are identified on **Figure 7.4 Visual Effects Drawing** and relevant viewpoints on **Figure 7.5 Viewpoint Photographs** of this ES (**Application Document Reference: TR010031/APP/6.2**).
- 7.10.87. Significant effects arising as a result of the Scheme, during the winter of Year 0 of the operational phase on the above receptor types are identified below in Table 7-15.

Table 7-15 - Significant visual effects during winter year of opening

No.	Viewpoint (Relevant)	Location (address)	Minimum Distance to	Sensitivity	Magnitude of Impact	Significance of Effects
R7	4	Lamesley Road: North Farm, 1-4 The Courtyard	320m	Sensitivity: High	Winter year 1: Moderate Adverse	Moderate adverse
R8	6	Lamesley Road: 4-6 The Cottages, The Vicarage, Temple Meads	450m	Sensitivity: High	Winter year 1: Moderate Adverse	Moderate adverse
R17	N/A	Long Bank: 41	50m	Sensitivity: High	Winter year 1: Minor Adverse	Moderate adverse
P3	4	Lamesley 1 - 450 length	60m	Sensitivity: High	Winter year 1: Moderate Adverse	Moderate adverse
O15	8	Longacre Wood	40m	Sensitivity: High	Winter year 1: Moderate Adverse	Moderate adverse

Summer Year 15 (Design Year)

Residential

- 7.10.88. Following the successful establishment of the proposed mitigation strategy as outlined in **Figure 7.6 Landscape Mitigation Design** of this ES (**Application Document Reference: TR010031/APP/6.2**), the magnitude of impacts on visual receptors would be anticipated to have reduced since the winter in the year of opening. Although significant effects are still predicted to arise for a very small number of receptors where views of the Allerdene viaduct option remain, these would occur at the lower end of the scale, being **moderate adverse**. The total number of receptors identified as being subject to a significant effect would be ten. Four receptors would be subject to a **slight adverse** (not significant) effect.
- 7.10.89. Where views of Allerdene embankment option remain, it would represent a perceptible change in the view from a limited number of receptors, the resulting effects would be no greater than **slight adverse** (not significant) for six receptors.
- 7.10.90. For the majority of the visual receptors (454 no.) the effects would be **neutral** (not significant), the reinstatement of roadside vegetation would largely restore the majority of views of the A1 corridor to those currently experienced.
- 7.10.91. Those receptors identified in the winter of the year of opening as being subject to a **slight beneficial** (not significant) would continue to be subject to a similar significance of effect. The acoustic barrier would, in combination with the existing planting, contribute to a **slight beneficial** (not significant) effect.
- 7.10.92. The assessment has therefore concluded that the Scheme would not give rise to a significant visual effect on residential views, with only a small number of visual receptors being subject to a moderate adverse effect, the majority of visual receptors being subject to effects no greater than slight adverse.

Rights of Way

- 7.10.93. Following the establishment of the mitigation strategy, aimed at providing screening and integrating the Scheme into the wider landscape strategy the resulting significance of effects are anticipated to again reduce from those identified as arising in the winter of the year of opening. As a result of Allerdene viaduct option, receptor P3 would be subject to an effect of **moderate adverse**. For embankment option, receptor P3 would be subject to a **slight adverse** (not significant) effect. The majority of PRoW would be subject to **neutral** effects, with three PRoW being subject to a **slight beneficial** (not significant) effect as a result of the provision of an acoustic barrier along the northern edge of Birtley.
- 7.10.94. The assessment has therefore concluded that upon completion of the Scheme the visual effect on views from PRoW would be **not significant**, with only a single PRoW being subject to an effect of moderate adverse.

Other Receptors

- 7.10.95. Of the 23 no. other receptors identified within the assessment, all would be subject to an effect no greater than **slight adverse** (not significant), with the majority subject to a **neutral** (not significant) effect. This would include receptor O15, previously identified as being subject to a **moderate adverse** significance of effect, which following the establishment of the identified mitigation strategy (refer to **Figure 7.6 Landscape Mitigation Design** of this ES (**Application Document Reference: TR010031/APP/6.2**)) would be subject to a **neutral** (not significant) effect, the view being screened by replacement planting.

Highways

- 7.10.96. Following the establishment of the landscape strategy, views from local highways are anticipated to have reduced such that all locations would be subject to a **neutral** (not significant) significance of effect.
- 7.10.97. Receptor locations are identified on **Figure 7.4 Visual Effects Drawing** and relevant viewpoints on **Figure 7.5 Viewpoint Photographs** of this ES (**Application Document Reference: TR010031/APP/6.2**).
- 7.10.98. Significant effects arising in the summer of Year 15 of the operational phase on the above receptor types, as a result of the Scheme and specifically the Allerdene viaduct options are identified below in **Table 7-16**. Significant effects are not anticipated as a result of the Allerdene embankment option.

Table 7-16 - Significant visual effects during summer of design year

No.	Viewpoint (Relevant)	Location (address)	Minimum Distance to Scheme	Sensitivity	Magnitude of Impact	Significance of Effects
R7	4	Lamesley Road: North Farm, 1-4 The Courtyard	320m	Sensitivity: High	Moderate Adverse (Allerdene viaduct option only)	Moderate adverse (Allerdene viaduct option only)
R8	6	Lamesley Road: 4-6 The Cottages, The Vicarage, Temple Meads	450m	Sensitivity: High	Moderate Adverse (Allerdene viaduct option)	Moderate adverse (Allerdene viaduct option only)
P3	4	Lamesley 1 - 450 length	60m	Sensitivity: High	Moderate Adverse (Allerdene viaduct option)	Moderate adverse (Allerdene viaduct option only)

7.11 MONITORING

- 7.11.1. Following completion of the Scheme and to establish the effectiveness of the proposed mitigation strategy associated with it, ongoing monitoring would be required to be managed by Highways England.
- 7.11.2. This would take two forms:
- a. Monitoring of the growth and establishment of the planting strategy implemented as part of the Scheme.
 - b. Periodic review of agreed viewpoints to confirm that views associated with the Scheme have been mitigated as anticipated.
- 7.11.3. During the establishment period following the implementation of the planting strategy (assumed to be 5 years), ongoing monitoring of the shrubs, trees, and grassland would be required to ensure that the mitigation strategy is successfully delivered. This would involve an annual inspection and reporting on all plant material, to ensure that plants establish within acceptable levels, such that the mitigation strategy would be delivered in the future.
- 7.11.4. Landscape planting will be monitored for a period of five years following completion to ensure successful establishment. Any tree or shrub planted as part of the landscape design that, within a period of five years after planting, is removed, dies or becomes in the opinion of the relevant planning authority, seriously damaged or diseased, will be replaced in the first available planting season with a specimen of the same species and size as that originally planted, unless the Secretary of State, following consultation with the local authority, gives consent to a variation.
- 7.11.5. The periodic review of agreed viewpoints would be carried out through the regular surveying of specific viewpoints carried out in the following periods.
- a. The proposed viewpoints would be:
 - i. Viewpoint 6 – To monitor the continuing effects on residents and visitors to Lamesley and the associated CA.
 - ii. Viewpoint 13 – To monitor the effects on residents on the northern edge of Birtley.
 - iii. Viewpoint 20 – To monitor the effects on users of the PRoW to the north of the Scheme and on higher ground, including the Great North Forest Heritage Trail.
 - iv. Viewpoint 26 – To monitor any ongoing effects on visitors to the Angel of the North.
 - v. Viewpoint 28 – To monitor the effects on the southern fringes of Chowdene and housing to the north.
 - vi. Viewpoint 30 – To monitor the effects on residents of the northern edge of Kibblesworth.
 - b. This would be undertaken at the following times:
 - i. Year 6, one year after the end of the establishment phase of the contract, when initial growth of the planting strategy would have occurred and a review of the degree to

which planting is anticipated to continue to grow and provide the required levels of screening.

- ii. Year 10, five years after the end of the establishment phase, to review the degree to which planting is anticipated to continue to grow and provide the required levels of screening.
- iii. Year 15 after opening, which coincides with the design year identified within this assessment. This would enable the findings of the assessment to be reviewed and confirmed as having been delivered.

REFERENCES

Ref. 7.1 Highways England (2010). Interim Advice Note (IAN) 135/10 Landscape and Visual Effects Assessment. Available at:

<http://www.standardsforhighways.co.uk/ha/standards/ians/pdfs/ian135.pdf>

Ref. 7.2 Highways Agency (1994). Design Manual for Roads and Bridges, Volume 11, Section 3, Part 5, Landscape Effects.

Ref. 7.3 Countryside and Right of Way Act 2000 c.37. Available at www.legislation.gov.uk/ukpga/2000/37 [Accessed 30.4.18]

Ref. 7.4 Town and Country Planning Act 1990 c.8. Available at www.legislation.gov.uk/ukpga/1990/8 [Accessed 30.4.18]

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