

11. LANDSCAPE AND VISUAL IMPACT ASSESSMENT METHODOLOGY

Introduction

- 11.1 This appendix sets out the methodology applied to the Landscape and Visual Impact Assessment ('LVIA'). The LVIA is reports in **Environmental Statement (ES) Volume I Chapter 11: Landscape and Visual Amenity**.
- 11.2 Landscape and visual effects are interrelated but are assessed separately:
- Landscape effects relate to changes to the landscape as a resource, including physical changes to the fabric or individual elements of the landscape, its aesthetic or perceptual qualities and its overall landscape character; and
 - Visual effects relate to changes to receptor's (people's) visual amenity and views from the loss or addition of features within their view(s) due to the Scheme.
- 11.3 The LVIA methodology involves the following stages:
1. A baseline review of published landscape assessments, studies, relevant supporting evidence base documents, aerial photography, mapping, and field work to identify the landscape and visual baseline and receptors;
 2. Consideration of the sensitivity of landscape and visual receptors, based on an assessment of their respective value and susceptibility to change;
 3. Consideration of the magnitude of impact resulting from the proposed development during construction, Year 1 and Year 15 of operation. The consideration of magnitude of impact is based on the scale, duration, and reversibility of the impact. Short term durations are considered to be two years or less; medium term durations are considered to be between two and 15 years; and long-term durations are considered to be more than 15 years;
 4. Combination of the receptor's sensitivity and the magnitude of impact experienced to determine the resultant level of effect; and
 5. An assessment of the significance of the effect to the landscape and visual receptors for the above phases of the Proposed Development.
- 11.4 The assessment of the Proposed Development has been undertaken for:
- Peak construction activity in winter;
 - Year 1 operation during winter; and
 - Year 15 operation during summer, assuming proposed planting has established.

Applicable Guidance

- 11.5 This LVIA has been undertaken with reference to best practice, as outlined in the following guidance:
- Guidelines for Landscape and Visual Impact Assessment (3rd Edition, 2013) - Landscape Institute/Institute of Environmental Management and Assessmentⁱ;
 - Assessing landscape value outside national designations (2021) – Landscape Institute Technical Guidance Note 02/21ⁱⁱ;
 - Visual representation of development proposals (2019) - Landscape Institute Technical Guidance Note 06/19ⁱⁱⁱ;
 - Landscape Institute's Tranquillity Technical Guidance Notes 2017^{iv};
 - Landscape Character Assessment Guidance for England and Scotland (2002) - Countryside Agency/Scottish Natural Heritage^v; and
 - An Approach to Landscape Character Assessment (2014) - Natural England^{vi}.
- 11.6 GLVIA3 states within paragraph 1.1 that *'Landscape and Visual Impact Assessment (LVIA) is a tool used to identify and assess the significance of and the effects of change resulting from development on both the landscape as an environmental resource in its own right and on people's views and visual amenity.'*
- 11.7 It also states that when identifying landscape and visual effects there is a *'need for an approach that is in proportion to the scale of the project that is being assessed and the nature of the likely effects. Judgement needs to be exercised at all stages in terms of the scale of investigation that is appropriate and proportional.'*
- 11.8 GLVIA3 recognises within paragraph 2.23 that professional judgement is at the core of LVIA, and that while some change can be quantified (for example the number of trees which may be lost), *'much of the assessment must rely on qualitative judgements'*. The Landscape Institute's Technical Committee has advised that the 2013 revision of the GLVIA *'places greater emphasis on professional judgement and less emphasis on a formulaic approach'*.

Establishment of the Baseline

- 11.9 The landscape and visual baseline has been informed by relevant policy and guidance as well as desk based review of OS mapping, aerial photography, and topographical data.
- 11.10 Field surveys have also been undertaken to review and record baseline landscape character and visual amenity across the Site and Study Area.

Landscape Baseline and Receptors

- 11.11 GLVIA3 defines landscape receptors as *“aspects of the landscape resource that have the potential to be affected by a proposal”*.
- 11.12 Landscape receptors have been identified via a review of published landscape character assessments, maps and aerial photography, relevant planning policy and fieldwork surveys.
- 11.13 Landscape character is defined by GLVIA3 as *“a distinct, recognisable and consistent pattern of elements in the landscape that makes one landscape different from another, rather than better or worse”*.

Visual Baseline and Receptors

- 11.14 Visual receptors are defined in GLVIA3 as *“individuals and/or defined groups of people who have the potential to be affected by a proposal”*. This includes residents, users of public rights of way (PRoW), rail users and motorists. A computer-generated zone of theoretical visibility (ZTV) was prepared based on 3-dimensional models of existing terrain and the Scheme. GLVIA3 defines the ZTV as *“a map, usually digitally produced, showing areas of land within which a development is theoretically visible.”* The ZTV will be updated as the design of the Proposed Development is progressed through until preparation of the Environmental Statement.
- 11.15 The purpose of the ZTV is to:
- Identify the theoretical extents of the Proposed Development’s visibility i.e. the locations from which it could potentially appear in existing views;
 - Assist in the identification of the Study Area;
 - Identify visual receptors likely to be affected by the Proposed Development;
 - Identify locations that are representative of the views experienced by visual receptors at different locations within the Study Area (representative viewpoints); and
 - Inform the design, including the extent and type of proposed mitigation.
- 11.16 An initial list of visual receptors likely to experience change to their visual amenity due to construction, operation or decommissioning of the Proposed Development has been identified through analysis of the ZTV and through field surveys. Visual receptors identified are categorised into the following categories:
- Residents;
 - Users of public rights of way;
 - Visitors to nearby Country Parks;
 - People travelling on roads; and

- Users of the rail network.

11.17 Visual receptors who are likely to experience similar views have been grouped as a single receptor group.

Representative Viewpoints

11.18 In line with GLVIA3, initial viewpoints have been selected for illustration of the visual effects likely to be experienced by visual receptors. The viewpoints have been selected to inform and illustrate the visual assessment, capturing views experienced by visual receptors and demonstrating the difference in visibility across different viewing distances, elevation, and orientations from across the Study Area. All representative viewpoints have been located in publicly accessible locations.

Assessment of Landscape Effects

11.19 Paragraph 5.39 of GLVIA3 states that “*landscape receptors need to be assessed firstly in terms of their sensitivity, combining judgements of their susceptibility to the type of change or development proposed and the value attached to the landscape*”.

Landscape Value

11.20 Landscape value refers to the relative value that is attached to different landscapes by society. The assessment of the value of each landscape receptor has been informed by the information set out in the baseline, including any relevant landscape designations, geographic criteria and valued features as set out in GLVIA3 Box 5.1, e.g. aesthetic, perceptual, or experiential value and in the Landscape Institute’s technical note regarding the assessment of landscapes outside national designations.

Table 11.1 Criteria for the Assessment of Landscape Value

	Typical Criteria
Very High	Nationally designated landscapes, such as National Landscapes, National Parks or World Heritage Sites. Generally, landscapes in very good condition, with intact and distinctive features. May have elevated levels of tranquillity or appear wild. May contain very rare features and may be of particular historic or ecological interest and value. May have significant recreational value.
High	Often locally designated landscapes, and usually with high landscape quality and in a good condition. May have higher than average recreational value, or ecological or historical interest. May be considered particularly scenic or allow for particularly scenic public views from within the landscape. May have well-known cultural associations. May be identified as a particularly good example of a characteristic landscape or contain particularly good examples of characteristic landscape elements.
Medium	Ordinary landscapes. May have localised scenic qualities, with limited recreational value. May have undesignated heritage or ecological value at a local level.

Low	Degraded landscape. May have limited public accessibility or views. May have many features which detract from the scenic quality or tranquillity. May have little ecological or cultural interest.
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Landscape Susceptibility

- 11.21 GLVIA3 (paragraph 5.40) defines landscape susceptibility as *“the ability of the landscape receptor (whether it be overall character of condition of a particular landscape type or area, or an individual element and/or features, or a particular aesthetic and perceptual aspect) to accommodate the proposed development without undue consequences for the maintenance of the baseline situation and/or the achievement of landscape planning policies and strategies”*.

Table 11.2 Criteria for the Assessment of Landscape Susceptibility

	Typical Criteria
High	Landscapes with a poor capacity to accommodate change, owing to the interaction of the proposed development with the topography, vegetation cover, built form, etc. Landscapes with little or no ability to absorb change, as change would conflict or be out of context with the character of the surroundings. Landscapes where there is little or no screening possible, and where development would be readily visible, and out of character.
Medium	Landscapes with a good capacity to accommodate change. The change would be reflective of the scale and character of parts of the surrounding landscape. Some landscape elements may be lost due to development, but this could be mitigated.
Low	A landscape with a very good capacity to accommodate change, with proposed development comprising a small part of the wider landscape or being in-keeping with the overarching character of the surroundings. Development may be very well screened or may complement or enhance the local character.

Landscape Sensitivity

- 11.22 Landscape value and landscape susceptibility are assessed separately and then combined to define the sensitivity of the landscape receptor, with reference to the criteria set out in Table 3. Generally, value and susceptibility are given even weightings when combined, however, every situation is different and professional judgement will be applied to determine if the weighting deviates from this. Landscape sensitivity can also be expressed as the intermediate levels of 'low-medium' and 'medium-high'.

Table 11.3 Definitions of Landscape Sensitivity

	Typical Criteria
Very High	A landscape that is typically of higher value, and with a high susceptibility to change. May include nationally designated landscapes, or landscapes of very high quality or value.
High	A landscape with a limited ability to accommodate change, of higher to medium landscape value. Often landscapes of higher quality, and may be locally designated.

Medium	Landscapes with a good capacity to accommodate change, where change would not lead to major loss or damage to landscape elements or character. Often landscapes of medium value.
Low	A landscape with a very good ability to accommodate change, where change would not lead to major loss of key or important elements. Often lower value landscapes.

Magnitude of Landscape Change

11.23 GLVIA3 notes that magnitude is informed by combining considerations of the scale, extent, and duration of an effect. The LVIA will consider the duration of effects as:

- Short term: 0–2 years;
- Medium term: 2–15 years; and
- Long term: over 15 years.

Table 11.4 Definitions of Magnitude of Landscape Change

	Typical Criteria
High	Total loss or major alteration to key receptors, characteristics or features of the baseline.
Medium	Partial loss or damage to key receptors, characteristics or features, or partial improvement, restoration or addition to these features.
Low	Minor loss or alteration, or minor improvement to key receptors, characteristics or features.
Negligible	Very limited loss or alteration, or limited improvement to key receptors, characteristics or features.
Neutral	No identifiable change.

Landscape Effect

11.24 The landscape effect is judged by combining judgements on sensitivity and magnitude of change. The effects can be either beneficial, adverse or neutral. Changes can also be beneficial, including through the creation of new landscape features, introduction of beneficial management practices, or improving public or recreational access.

Table 11.5 Definitions of Landscape Level of Effect

	Typical Criteria
Major	Effects are in complete variance to the baseline landscape. Proposals may have a substantial detrimental or beneficial effect on the landscape resource or character.
Moderate	Effects result in fundamental alterations to the landscape resource or character, which may not be fully mitigated. Effects may result in clearly identifiable benefits.
Minor	Effects result in slight alterations to the landscape resource or character, with mitigation being effective. There may be some beneficial effects.

Negligible	Effects would barely perceptible on the landscape resource or character, either beneficial or adverse.
Neutral	No identifiable effect.

Significance of Landscape Effect

- 11.25 Following identification of the level of effect, an assessment of significance is provided. Major and moderate effects (adverse or beneficial) are typically considered to be significant. Minor, negligible, and neutral effects are considered not significant.

Assessment of Visual Effects

- 11.26 Visual effects are concerned with people's views and the change that will occur due to the Proposed Development. GLVIA3 recognises that it is not always possible to view the site during both the winter and summer months. Visibility is likely to be greatest during the winter months when vegetation is out of leaf. As such, the assessment of visual effects takes into consideration both summer and winter views, and assesses the worst case scenario.

Visual Value

- 11.27 The value attached to views experienced will be considered in line with GLVIA3, paragraph 6.37, which identifies the following indicators of value:
- Views associated with heritage assets or planning designations;
 - Appearances in guidebooks or tourist maps or proximity to facilities such as parking or interpretive materials; and
 - References to views in literature or art.

Table 11.6 Criteria for the Assessment of Visual Value

	Typical Criteria
Very High	Recognised or iconic views within nationally/internationally designated landscapes, such as National Parks, National Landscapes and/or national/international landmarks with views recognised in planning policy and/or management plans, or from viewpoints specified in guide books or OS maps.
High	Views or viewing places of local importance such as designated historic landscapes, or views across a landscape that includes some high quality elements or features of interest, such as landmarks, which may be identified in the Local Plan, Neighbourhood Plan or Conservation Area Appraisals.
Medium	Views of ordinary landscapes with common landscape elements.
Low	Views of moderate to poor quality landscapes with some detracting features.

Visual Susceptibility

- 11.28 The susceptibility of visual receptors results from parameters, such as:
- The occupation or activity of people experiencing the view at particular locations; and
 - The extent to which their attention or interest may therefore be focussed on the views and the visual amenity they experience at particular locations.
- 11.29 GLVIA3 notes that visual receptors “*most susceptible to change*” include residents at home and visitors engaged in outdoor recreation whose attention is likely to be focused on the landscape and particular views. Visitors to heritage assets where the view is important, and communities where views contribute to the landscape setting are also noted as indicators of susceptibility.

Table 11.7 Criteria for the Assessment of Visual Susceptibility

	Typical Criteria
High	People whose attention or interest is focused on their view, such as residents, or it forms an important part of the reason for visiting, for example designated viewpoints, promoted routes and PRowS within designated landscapes.
Medium	People whose attention is less focussed on their view or are passing through the area where views are relevant to the experience of the journey but are not specific to the reasons for visiting, for example users of local roads and PRowS outside of designated landscapes.
Low	People passing through the area at higher speeds where their attention is not focussed on their surroundings or where the view is not relevant to the activity, for example users of main roads, railways or people at work.

Visual Sensitivity

- 11.30 Paragraph 6.31 of GLVIA3 states that “*each visual receptor, meaning the particular person or group of people likely to be affected at a specific viewpoint should be assessed in terms of both their susceptibility to change in views and visual amenity and also the value attached to particular views.*”
- 11.31 Visual value and visual susceptibility are assessed separately and then combined to define the sensitivity of the visual receptor, with reference to the criteria set out in Table 11.8. Generally, value and susceptibility are given even weightings when combined, however, every situation is different and professional judgement will be applied to determine if the weighting deviates from this. Visual sensitivity can also be expressed as the intermediate levels of ‘low-medium’ and ‘medium-high’.

Table 11.8 Definitions of Visual Sensitivity

	Typical Criteria
Very High	A recognised / iconic or highly promoted view across a designated landscape or international or national feature viewed by people visiting specifically to experience the view, or residents with open views across designated landscapes.

High	Activity resulting in a particular interest or appreciation of the view, such as from promoted walking routes, or residents with views across valued landscapes.
Medium	Activity resulting in a general interest or appreciation of the view and/or a view of local or community value.
Low	Activity where interest or appreciation of the view is secondary to the activity, softened, filtered or short in duration and/or a view of community value. Activity where interest or appreciation of the view is not relevant to the activity and/or very low value of existing view.

Magnitude of Visual Change

11.32 A professional judgement is made to determine the magnitude of change on visual receptors, with reference to Table 11.9. It takes into consideration factors such as the extent of the change (in terms of character and geography), the scale of the proposal, the duration of the change, the reversibility, and the proportion of the change. The magnitude of change will generally decrease with distance from its source, until a point is reached where there is no discernible change.

11.33 GLVIA3 notes that magnitude is informed by combining considerations of the scale, extent, and duration of an effect. The LVIA will consider the duration of effects as:

- Short term: 0–2 years;
- Medium term: 2–15 years; and
- Long term: over 15 years.

Table 11.9 Definitions of Magnitude of Visual Change

	Typical Criteria
High	A dominant change in view which would be obviously discordant and out of context. Changes would occupy the majority of the view.
Medium	An obvious visual change which may be discordant, or not discordant but clearly visible over a large proportion of the view.
Low	Small changes to views that would be noticeable. Changes may be discordant over a small proportion of the view, or not discordant over a larger proportion of the view.
Negligible	The change will be discernible, but the character of the view will not materially change, or the change may not be discordant.
Neutral	No identifiable change.

Visual Effect

11.34 The visual effect is judged by combining judgements on sensitivity and magnitude of change. As with landscape effects, the effects can be either beneficial, adverse or neutral.

Table 11.10 Definitions of Visual Level of Effect

	Typical Criteria
Major	The proposals would be clearly visible and dominant and would cause a substantial deterioration or improvement to a view from a more sensitive receptor.
Moderate	The proposal would be readily identifiable/visible and would cause some deterioration or improvement to a view from a more sensitive receptor, or a greater deterioration or improvement to a view from a less sensitive receptor.
Minor	The proposal would be noticeable and would cause limited deterioration or improvement to a view from a more sensitive receptor, or some deterioration or improvement from a less sensitive receptor.
Negligible	The proposal would not significantly change the view but would be discernible.
Neutral	No change in view.

Significance of Visual Effect

- 11.35 Following identification of the level of effect, an assessment of significance is provided. Major and moderate effects (adverse or beneficial) are typically considered to be significant. Minor, negligible, and neutral effects are considered not significant.

Visualisation and Photography

- 11.36 The photographs and visualisations within this report have been prepared in general conformance with the Landscape Institute's Technical Guidance Note 06/19. The 'types', as set out within the Guidance, comprise the following:
- Type 1 - annotated viewpoint photographs;
 - Type 2 - 3D wireline/model;
 - Type 3 - photomontage/photowire;
 - Type 4 - photomontage/photowire (survey/scale verifiable).
- 11.37 The baseline photographs within this report include a combination of context photographs (showing the character of the site and surroundings), as well as Type 1 photographs (which are displayed at a recognised scale and angle of view, as per the guidelines).
- 11.38 Photographs were taken with a digital camera with a lens that approximates to 50mm, to give a similar depth of view to the human eye. In some cases, images have been joined together to form a panorama. The prevailing weather, and any effects on visibility are noted. Images are displayed at the most appropriate size, taking into account the published guidance, legibility at A3 paper size, and context (which is often shown for illustrative purposes only), and allows for enlarged scale printing if required.

11.39 The Guidance Note advocates a proportionate and reasonable approach, which includes professional judgement, in order to aid informed decision making.

ⁱ <https://www.landscapeinstitute.org/visualisation/>

ⁱⁱ <https://www.landscapeinstitute.org/publication/tgn-02-21-assessing-landscape-value-outside-national-designations/>

ⁱⁱⁱ <https://www.landscapeinstitute.org/visualisation/>

^{iv} <https://landscapewpstorage01.blob.core.windows.net/www-landscapeinstitute-org/2017/02/Tranquillity-An-Overview-1-DH.pdf>

^v <https://digital.nls.uk/pubs/e-monographs/2020/216649977.23.pdf>

^{vi} <https://assets.publishing.service.gov.uk/media/5aabd31340f0b64ab4b7576e/landscape-character-assessment.pdf>