Appendix 5.1: LANDSCAPE AND VISUAL IMPACT ASSESSMENT METHODOLOGY

1.0 Introduction

1.1 Landscape and Visual Impact Assessment (LVIA) is a tool used to systematically identify and assess the nature and significance of the effects of a proposed development upon the landscape and upon views and visual amenity. The purpose of the LVIA is to identify the level and nature of effect arising from a proposed development and if necessary, through an iterative design process, to inform changes to the development and evolution of mitigation strategies which minimise significant effects wherever possible.

1.2 The methodology for this LVIA is informed by guidance contained within the *Guidelines for Landscape and Visual Impact Assessment* (The Landscape Institute and Institute of Environmental Assessment, 3rd Edition, 2013), often referred to as 'the GLVIA'. The LVIA aims to establish the following:

- A clear understanding of the development site and its context, in respect of the physical and perceived landscape and of views and visual amenity;
- An understanding of the proposed development in terms of how this would relate to the existing landscape and views;
- An identification of likely significant effects of the proposed development upon the landscape and upon views, throughout the life-cycle of the development, including cumulative interactions with other developments;
- Those mitigation measures necessary to reduce/eliminate any potential adverse effect on the landscape or views arising as a result of the proposed development; and
- A conclusion as to the residual likely significant effects of the proposed development.

1.3 Professional judgement is a very important part of the LVIA process at every stage of the assessment. This judgement must be exercised within an assessment framework that transparently sets out the steps in the assessment process which have led to the overall conclusions. This is emphasised in Box 3.1 (page 37) of the GLVIA, which advocates a structured approach that considers the sensitivity of the receptor and magnitude of the effect when determining if an effect is significant or not.

1.4 To ensure the transparency of the assessment and professional judgements made, the LVIA follows a standard approach, namely:

- The establishment of the baseline conditions, against which the effects of the proposed development will be assessed;
- The determination of the nature of the receptor likely to be affected, i.e. its sensitivity;
- The prediction of the nature of the effect likely to occur, i.e. the magnitude of change; and
- An assessment of whether a likely significant effect would occur upon any receptor, by considering the predicted magnitude of change together with the sensitivity of the receptor, taking into account any proposed mitigation measures.

1.5 The GLVIA clarifies that the guidance concentrates on

[1.20] "*…principles while also seeking to steer specific approaches where there is a general consensus on methods and techniques. It is not intended to be prescriptive, in that it does not provide a detailed 'recipe' that can be followed in every situation. It is always the primary responsibility of any landscape professional carrying out an assessment to ensure that the approach and methodology adopted are appropriate to the particular circumstance*".

1.6 As set out above, use of professional judgement within a structured assessment framework is a very important element of the assessment of landscape and visual effects. As discussed in the GLVIA:

[2.23] "*…Whilst there is some scope for quantitative measurement of some relatively objective matters, …much of the assessment must rely on qualitative judgement, for example about what effect the introduction of a new development or land use change may have on visual amenity, or about the significance of change in the character of the landscape and whether it is positive or negative*".

[2.24] "*…In all cases there is a need for the judgements that are made to be reasonable and based on clear and transparent methods so that the reasoning applied at different stages can be traced and examined by others…*"

[2.26] "*…In carrying out an LVIA the landscape professional must always take an independent stance, and fully and transparently address both the negative and positive effects of a scheme in a way that is accessible and reliable for all parties concerned*".

1.7 Landscape and visual matters are separate, although closely related and interlinked issues, and are dealt with as such throughout the LVIA. The methodologies for assessing both are outlined separately below.

2.0 Landscape Assessment

2.1 The landscape assessment considers the potential effects of the proposed development on the components of the landscape as an environmental resource. Landscape receptors which could be affected by a proposed development may include:

- Individual constituent elements and features of the landscape (sometimes referred to as landscape fabric);
- Specific aesthetic and perceptual qualities of the landscape;
- The overall character and key characteristics of the landscape as experienced in different areas (e.g. landscape character areas or types).

Sensitivity

2.2 The nature of a landscape receptor likely to be affected, i.e. its **sensitivity** is determined by considering two factors, namely:

- Susceptibility to change; and
- Value.

Susceptibility to Change

2.3 Susceptibility to change is defined in the GLVIA as follows:

[5.40] "*This means the ability of the landscape receptor (whether it be the overall character or quality/condition of a particular landscape type or area, or an individual element and/or feature, 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 polices and strategies*"

[5.41] "*The assessment may take place in situations where there are existing landscape sensitivity and capacity studies, which have become increasingly common. They may deal with the general type of development that is proposed, in*

which case they may provide useful preliminary background information for assessment. But they cannot provide a substitute for the individual assessment of the susceptibility of the receptors in relation to change arising from the specific development proposal".

2.4 To understand susceptibility to change, the various characteristics/factors that make up a particular landscape must be identified and consideration given as to how these will be affected by the proposed development. Consideration is given to physical and perceptual factors which are considered together to derive an overall susceptibility to change. Factors influencing the susceptibility of a landscape to change resulting from *new road and parking areas, electrical substations, and external storage areas* are set out below:

- **Scale:** A larger scale landscape (relative to the development proposed) will typically be less susceptible than a smaller scale landscape;
- **Pattern/Complexity:** The susceptibility of a receiving landscape to change will be influenced by the specific pattern of features and elements present and by the complexity of this pattern;
- **Development/Human Influence:** A landscape that includes obvious alterations to natural ground levels, contemporary development, or that is clearly functional/ utilitarian in land use will typically be less susceptible than one where development is more traditional in style, or where natural influences and natural, or long-established landforms are predominant;
- **Connections with adjacent areas:** A landscape which has a clear relationship with other surrounding landscapes, for example in relation to views in and out will typically be more susceptible than one where such relationships are not present;
- **Visual Interruption:** A landscape where views are frequently interrupted by screening features, for example vegetation cover or variations in landform will typically be less susceptible than one where there are few/no screening features.

2.5 A particular landscape may have different characteristics that are more or less susceptible to change. As such, the overall susceptibility to change allocated using professional judgement based upon consideration of the various factors outlined above and the relative weight attached to these (which will vary from landscape to landscape). The assessment of susceptibility is expressed using a three point

verbal scale of high, medium or low. Where appropriate, intermediate levels such as medium/high or low/medium are used to refine the assessment. The rationale in support of the assessment of susceptibility is set out for each receptor in the assessment, so that it is clear how each judgement has been made.

Value

2.6 The value of the landscape receptor is independent of any development proposal. The absence of a formal landscape designation does not necessarily imply that a landscape is of lower value. Value is defined in the GLVIA as:

[5.19] "*…the relative value that is attached to different landscapes by society, bearing in mind that a landscape may be valued by different stakeholders for a whole variety of reasons…Landscapes or their component parts may be valued at the community, local, national or international levels…*"

2.7 Factors that can help in identifying valued landscapes include:

- Presence/absence of statutory landscape designations;
- Presence/absence of local landscape designations and associated policies;
- Landscape quality/condition;
- Scenic quality;
- Rarity of particular elements/features;
- Representativeness;
- Conservation interest;
- Recreation value;
- Perceptual aspects; and
- Cultural associations.

2.8 The assessment of value is expressed on a similar basis to that described for susceptibility of change above. Table 2.1 indicates how the above factors have been used to determine landscape value.

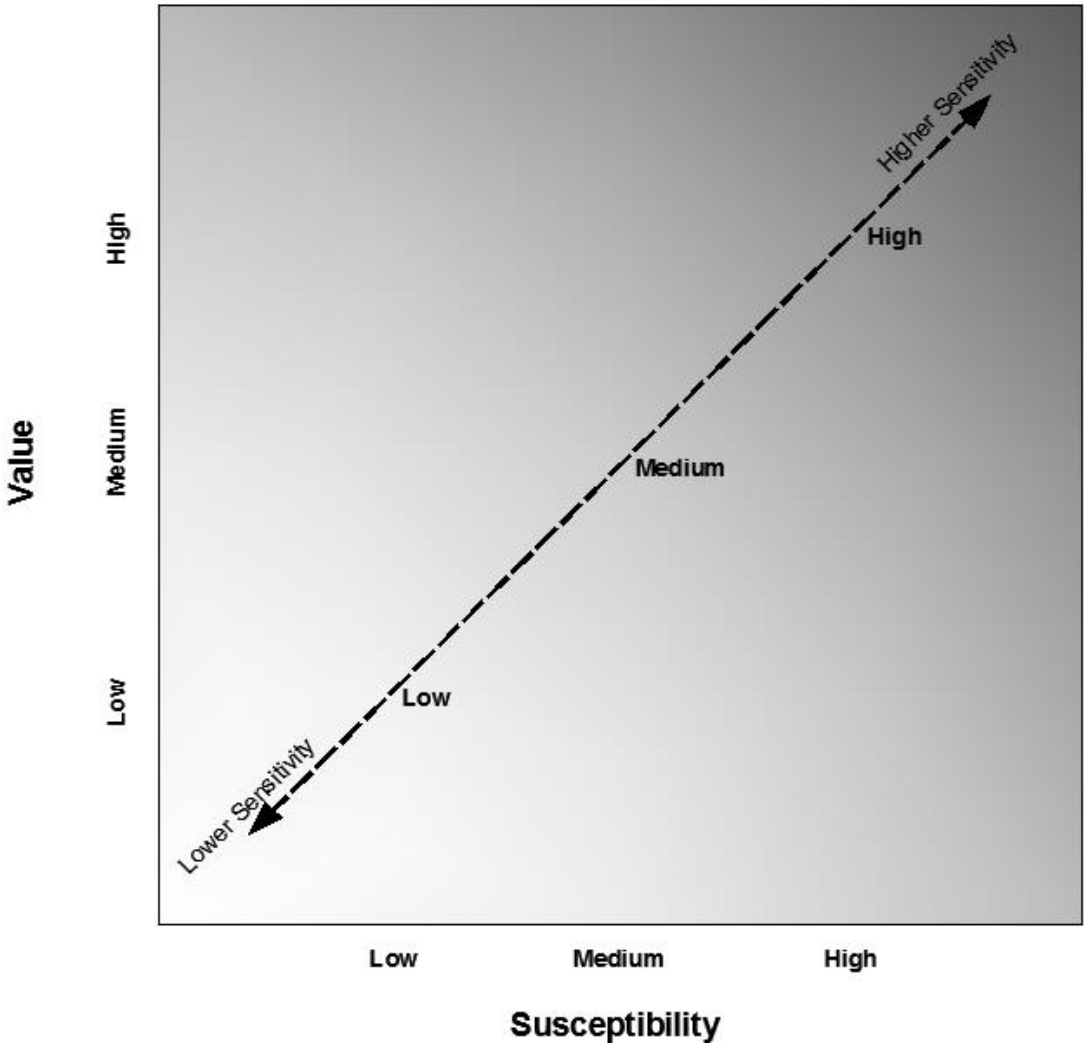
Table 2.1: Landscape Value Criteria

	Criteria tending towards higher or lower value	
	Higher ←	→ Lower
Value	Unique, and/or strongly positive landscape character, often with strong associations or (non-landscape) environmental designations. Nationally designated landscape (protected by statute).	Widespread or common landscape character. Negative character. Lack of other environmental qualities Landscape without formal designation and with limited positive contribution to the locality

Sensitivity

2.9 Susceptibility to change and value are considered together to determine the sensitivity of the receptor. It should be noted that the relationship between susceptibility to change and value can be complex and is not linear. For example a highly valued landscape (such as a National Park) may have a low susceptibility to change, due both to the characteristics of the landscape and the nature of the change proposed. Table 2.2 below provides a guide as to how susceptibility and value can be combined to assess sensitivity (with the grey shading indicative of the increasing sensitivity of receptors with increasing susceptibility and/or value). However, the final assessment of sensitivity is one of professional judgement based on consideration of the susceptibility and value assessments.

Table 2.2: Indicative Sensitivity Assessment



Magnitude

2.10 The nature of the effect that is likely to occur, i.e. its **magnitude**, is determined by considering four separate factors, namely:

- Size/scale;
- Geographical extent;
- Duration;
- Reversibility.

2.11 The size and scale of an effect is determined by considering the amount of change experienced by a receptor, including:

- The extent of existing landscape elements that would be lost, the proportion of the total extent that this represents; and the contribution of that element to the wider character;
- The degree to which aesthetic or perceptual aspects of the landscapes are altered by the removal, or introduction of new landscape components;
- Whether change affects the key characteristics of a landscape.

2.12 The geographical extent of an effect is the area over which effects will be experienced. It is not the same as size/scale, as a small-scale change may be experienced over a wider area, or vice-versa.

2.13 The duration of an effect simply relates to the length of time for which it would be experienced, as follows:

- Long-term: 10+ years; or the change could not reasonably be considered temporary in nature;
- Medium-term: 3-10 years; and
- Short-term: 0-3 years.

2.14 The reversibility of an effect relates to the prospects and practicality of an effect being able to be wholly or partially reversed, or whether the change cannot realistically be reversed, i.e. it is permanent.

2.15 These four factors are then considered together to derive an overall magnitude of change for each receptor, which is determined by use of professional judgement. The assessment of the magnitude of change is expressed using a four point verbal scale of large, medium, small or negligible. Where appropriate, intermediate levels such as medium/large or small/medium are used to refine the assessment. Table 2.3 indicates how the above factors have been used to inform magnitude of change. As the circumstances of each specific receptor will vary, a reasoned narrative is set out in the LVIA in order to justify the particular magnitude of change allocated to each receptor.

Table 2.3: Magnitude of Landscape Change Criteria (indicative)

Magnitude	Description
Large	A substantial change in landscape characteristics and/or over extensive geographical area and/or which may result in an irreversible landscape impact.
Medium	A moderate change in landscape characteristics and/or which may be over a large geographical area, and/or which may be reversible over a long duration of time.
Small	A small change in landscape characteristics and/or which may be over a relatively localised geographical area, and/or which may be reversible over a short duration of time.
Negligible	A barely perceptible change in landscape characteristics and/or which is focused on a small geographical area, and/or which is almost or completely reversible.

3.0 Visual Assessment

3.1 A visual assessment is concerned with the potential effects upon the population likely to be affected (i.e. the views experienced by people). As for landscape effects (Section 2.0), the sensitivity of the receptor affected is identified, as is the magnitude of the change that would occur. These are then considered together to determine the level and significance of effect.

3.2 A key part of the visual assessment is the assessment of effects from a number of predetermined viewpoints, which reflect views available to different groups of people. The viewpoint itself is not the receptor; rather it is the people that would be experiencing the view. These people will generally have different responses to a change in view depending upon their location, their activity, and other factors, including the weather and time of day/year. Viewpoints fall into three categories(as set out in the GLVIA):

- Representative viewpoints (which represent the experience of different types of receptors in the vicinity);
- Specific viewpoints (a particular view, for example a well-known beauty spot);
- Illustrative viewpoints (which illustrate a particular effect/issue, which may include limited/lack of visibility).

3.3 Private viewpoints, such as from specific residential properties are not typically included in the LVIA. It is often impractical to visit all affected properties and access to private land may not be granted. Representative or specific viewpoints from nearby publicly accessible locations can often give an impression of what effects from private land would be.

Sensitivity

3.4 The nature of a visual receptor likely to be affected, i.e. its **sensitivity** is determined by considering two factors, namely:

- Susceptibility to change;
- Value.

Susceptibility to Change

3.5 The GLVIA identifies susceptibility to change in view/visual amenity as:
[6.32] "*...mainly a function of:*

- *The occupation or activity of people experiencing the view at particular locations; and*
- *The extent to which their attention or interest may therefore be focused on the views and the visual amenity they experience at particular locations*".

3.6 Susceptibility to change is, in part, classified based upon the indicative criteria, provided in the GLVIA, as set out in Table 3.1 over the page.

Table 3.1: Typical Visual Susceptibility to Change Criteria (indicative)

Criteria Level	Description
Susceptibility to Change	
High	Residents at home; People engaged in outdoor recreation, whose attention/interest is likely to be focused on the landscape or particular views, including from public rights of way; Visitors to heritage assets or other attractions, where views of the surroundings are an important contributor to the experience; Communities where views contribute to the landscape setting enjoyed by residents; Travellers on scenic routes.
Medium	Travellers on road, rail, or other transport routes.
Low	People engaged in outdoor sport/recreation which does not involve/depend upon appreciation of views of the landscape; People at their place of work whose attention may be focused on their work/activity and not their surroundings.

3.7 It is important to note that the examples set out in GLVIA and Table 3.1 above only address the first bullet point and part of the second bullet point in paragraph 3.5 above (which are focussed on the occupation or activity of the people and the extent to which their attention is focussed on the view).

3.8 As such, the assessment of susceptibility in Table 3.1 and GLVIA (pages 113 &114) needs to be adjusted to reflect the requirements of the final part of the second bullet point, namely the visual amenity that people currently experience. GLVIA identifies clearly that the division between categories of susceptibility to change:
[6.35] "*…is not black and white and in reality there will be a gradation in susceptibility to change. Each project needs to consider the nature of the groups of people who will be affected and the extent to which their attention is likely to be focused on views and visual amenity…*"

3.9 For example, the presence of existing detracting features in any given view may reduce the visual amenity of those experiencing the view. This may therefore reduce their susceptibility to certain types of change and ultimately their sensitivity.

3.10 The assessment of susceptibility to change is made on the same basis as for landscape effects (Section 2.0 above). A three point scale (with intermediate levels where appropriate) is used, supported by a reasoned narrative that explains the judgement made.

Value

3.11 In accordance with paragraph 6.37 of the GLVIA when considering the value of a view experienced, this should take account of:

- Recognition of the value attached to particular views, for example in relation to heritage assets, or through planning designations;
- Indicators of the value attached to views by visitors, for example through appearances in guidebooks or on tourist maps, provision of facilities for their enjoyment and references to them in literature or art.

3.12 For this reason, whilst not specifically referenced in the current edition of GLVIA, the number of people likely to be affected can influence the value assigned to a particle view.

3.13 The assessment of value is made on the same basis as the assessment of susceptibility of change.

Sensitivity

3.14 Susceptibility to change and value are considered together as discussed above for landscape sensitivity and illustrated above on Table 2.2. Again, professional judgement determines the final judgement of sensitivity, due to the non-linear and complex relationship between susceptibility and value. A reasoned narrative is set out in the LVIA in order to justify the particular sensitivity assessed for each receptor, so that it is clear how each judgement has been made.

Magnitude

3.15 The nature of the visual effect that is likely to occur, i.e. its **magnitude**, is determined by considering four separate factors, namely:

- Size/scale;
- Geographical extent;
- Duration;
- Reversibility.

3.16 The size and scale of an effect is determined by considering the following:

- The scale of change in view, in respect of the loss of or addition of features, and change in composition, including the proportion of the view occupied by the development;
- The degree of contrast or integration of new features or other changes;
- The nature of the view, namely the relative amount of time it would be experienced for and whether the views would be full, partial or glimpsed.

3.17 The geographical extent of an effect will vary from viewpoint to viewpoint and will reflect the following:

- The angle of view in relation to the main activity of the receptor;
- The distance from the proposed development;
- The extent over which change in view would be visible.

3.18 The duration of an effect simply relates to the length of time for which it would be experienced, as follows:

- Long-term: 10+ years; or the change could not reasonably be considered temporary in nature;
- Medium-term: 3-10 years; and
- Short-term: 0-3 years.

3.19 The reversibility of an effect relates to the prospects and practicality of an effect being able to be wholly or partially reversed, or whether the change cannot realistically be reversed, i.e. it is permanent.

3.20 These four factors are then considered together to derive an overall magnitude of change for each receptor, which is determined by use of professional judgement. The assessment of the magnitude of change is expressed using a four point verbal scale of large, medium, small or negligible. Where appropriate, intermediate levels such as medium/large or small/medium are used to refine the assessment. Table 3.2 (over the page) indicates how the above factors have been used to inform magnitude of change. As the circumstances of each specific receptor will vary, a reasoned narrative is set out in the LVIA in order to justify the particular magnitude of change allocated to each receptor.

Table 3.2: Magnitude of Visual Change Criteria (indicative)

Magnitude	Description
Large	A change affecting a large proportion of a view, which may be seen across an extensive area or experienced from a long section of a route, and/or a longer-term effect, and/or contrasting with the existing view.
Medium	A change affecting a moderate proportion of a view, which may be seen across a wider area or experienced from a section of a route, and/or a medium-term effect, and/or broadly compatible with the existing view.
Small	A change affecting a smaller proportion of a view, which may be seen from a limited area or experienced from a short section of a route, and/or a shorter-term effect, and/or compatible with the existing view.
Negligible	A change which is barely perceptible in the view, and/or which is only glimpsed from a route.

4.0 Level and Significance of Effect

4.1 The purpose of Environmental Impact Assessment (EIA) is to determine the likely significant effects of a development proposal. Not all landscape and visual effects arising as a result of a particular proposal will be significant. Furthermore, a significant effect does not necessarily mean that such an effect is unacceptable to decision-makers. This is a matter to be weighed in the planning balance alongside other factors. What is important is that the likely effects of any proposal are transparently assessed and described in order that the relevant determining authority can bring a balanced and well-informed judgement to bear as part of the decision-making process.

4.2 *The State of Environmental Impact Assessment Practice in the UK* (Institute for Environmental Management and Assessment 2011) identifies a range of different factors that should be considered when evaluating the significance of an effect, including:

- Knowledge and experience of significance from previous assessments;
- Details of the development proposal, such as construction and operational activities, and the nature of the effect associated with such activity;

- Details about the environmental sensitivity of the area that will be affected;
- Feedback from scoping and consultation;
- The wider legal and policy context, which offers protection to the environment and community.

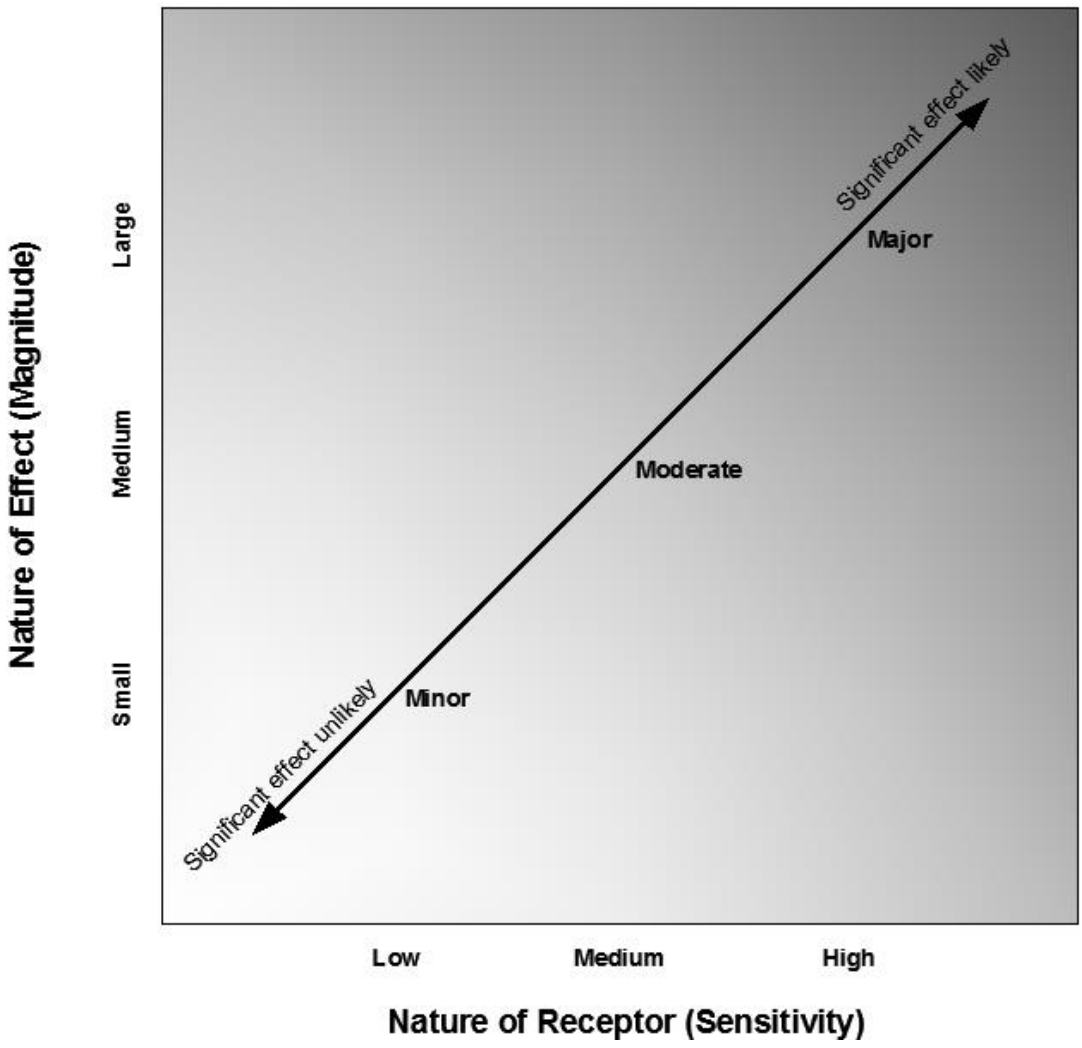
4.3 The level of effect can only be defined in relation to each particular development and its specific location. It is for each LVIA to determine how judgements about receptor sensitivity and the magnitude of change should be combined to derive the level of effect and to clearly explain how this assessment has been made, and if the level of effect is considered significant.

4.4 The matrix in Table 4.1 overleaf provides a guide as to how sensitivity and magnitude can be combined to identify the level of effect upon a receptor (with the grey shading indicative of the increasing level of effect with increasing sensitivity and/or magnitude). However, the final assessment of the level of effect and whether this is significant for decision makers is one of professional judgement.

4.5 Where magnitude of change is identified as 'negligible', then effects are automatically considered not to be significant due to the minimal level of change from baseline (which would often not be perceptible).

4.6 The judgement for this particular assessment is that greater than 'moderate' effects are more likely to be significant. This is because they would generally result from larger magnitudes of change on higher sensitivity receptors**.** This does not preclude a 'moderate' effect or lower being significant or a greater than 'moderate' effect not being significant. This judgement will depend on the specific circumstances being considered.

Table 4.1: Level of Effect Matrix (indicative)



4.7 The GLVIA identifies that:

[3.32] "*The Regulations require that a final judgement is made about whether or not each effect is likely to be significant. There are no hard and fast rules about what effects should be deemed 'significant' but LVIAs should always distinguish clearly between what are considered to be significant and non-significant effects…*

[3.33] *It is not essential to establish a series of thresholds for different levels of significance of landscape and visual effects, provided that it is made clear whether or not they are considered significant. The final overall judgement of the likely significance of the predicted landscape and visual effects is however, often summarised in a series of categories of significance reflecting combinations of sensitivity and magnitude. These tend to vary from project to project but they should*

be appropriate to the nature, size and location of the proposed development and should as far as possible be consistent across the different topic areas of the EIA".

[5.56] & [6.44] "*There are no hard and fast rules about what makes a significant effect, and there cannot be a standard approach since circumstances vary with the location and [landscape][1] context and with the type of proposal*".

4.8 It should be noted that effects may be either adverse (negative) or beneficial (positive). An effect can be significant and adverse, or significant and beneficial. If change occurs, with no obvious deterioration or improvement resulting, this can be said to be neutral.

[1] The word landscape is present in paragraph 5.56 of the 3rd edition of GLVIA only. Otherwise, the sentence quoted from paragraphs 5.56 and 6.44 is identical.