

CHAPTER 13

LANDSCAPE

CONTENTS

INTRODUCTION 1

Background.....1

Scope of Work / EIA Scoping.....1

Consultations / Consultees2

Contributors / Author(s)2

Limitations / Difficulties Encountered3

ADDITIONAL INFORMATION3

REGULATORY BACKGROUND 3

Legislation.....3

Planning Policy and Development Control.....4

Guidelines.....6

Technical Standards.....6

Significant Risks.....7

RECEIVING ENVIRONMENT 7

Study Area7

Baseline Study Methodology7

Sources of Information7

Field Survey.....8

Landscape Baseline.....8

Visual Baseline9

Sensitive Receptors.....10

IMPACT ASSESSMENT 12

Evaluation Methodology.....12

Operational Stage Landscape Effects.....12

Post – Operational Stage Landscape Effects.....14

Operational Stage Visual Effects14

Post – Operational Stage Visual Effects18

Direct/Indirect Effects.....18

Compliance with Planning Policies/Impact on Landscape Designations.....18



Unplanned Events (i.e. Accidents)	19
Cumulative / Synergistic Impacts.....	19
Transboundary Impacts	19
Interaction with Other Impacts	19
‘Do-nothing Scenario’	19
MITIGATION MEASURES	20
Operational Stage	20
Post – Operational Stage	20
RESIDUAL IMPACT ASSESSMENT	21
Operational Stage	21
Post – Operational Stage	21
MONITORING	21
REFERENCES	21
APPENDICES	22

TABLES

Table 13-1 Scenic Routes	13-5
Table 13-2 Visual Receptor Groups (VRG)	13-10
Table 13-3 Sensitivity of Landscape Receptors	13-12
Table 13-4 Factors of Magnitude Of Landscape Change	13-13
Table 13-5 Sensitivity of Visual Receptors	13-15
Table 13-6 Factors of Magnitude Of Visual Change.....	13-15

FIGURES

Figure 13-1 Landscape Baseline And Viewpoint Locations.....	13-43
Figure 13-2 Zone of Theoretical Visibility (ZTV) Map.....	13-43
Figure 13-3 Viewpoints A & B	13-43
Figure 13-4 Viewpoints C & D	13-43
Figure 13-5 Viewpoints E & F	13-43

INTRODUCTION

Background

- 13.1 This chapter if the EIAR assesses the landscape and visual impacts arising from the proposed development at Aghamore Near, Aghamore Far and Carrownamaddoo townlands, Co. Sligo.
- 13.2 Aghamore Quarry is located along the local road south west of the settlement of Aghamore, 200m south of the R287 – Regional Road and approximately 4km south of the centre of Sligo town. The existing quarry development consists of a large extraction area located on the western side of this local road, together with an associated processing area, located on the eastern side of the road. This planning application concerns the recommencement of the existing quarry development, and the deepening of the existing extraction area to a depth of -50m OD, the construction of a settlement lagoon, as well as the recommencement of processing activities within the processing area to the east of the local road, within an overall application area of c. 22.5 hectares. Further details on the proposed development are contained in chapter 2 of this EIAR.

Scope of Work / EIA Scoping

- 13.3 The draft EPA guidelines in relation to the preparation of an EIAR¹ suggest the following typical headings that may be included in respect of the prescribed environmental factor ‘The Landscape’:
- Landscape Appearance and Character;
 - Landscape Context;
 - Views & Prospects; and
 - Historical Landscapes.
- 13.4 These headings are incorporated in the below assessment, as appropriate. However, in the absence of more detailed Irish guidance, the overall scope of work of this ‘Landscape’ chapter is based on the information contained in the third edition of the *Guidelines for Landscape and Visual Impact Assessment* issued by the Landscape Institute and Institute of Environmental Management & Assessment² (hereafter referred to as GLVIA3).
- 13.5 GLVIA3 emphasises that landscape and visual effects are related but independent issues; landscape effects are changes in the landscape, its character and quality, while visual effects relate to the appearance of these changes and the resulting effect on visual amenity. The scope of work covered by this assessment can be summarised as follows:
- a description of the planning context relevant to this Landscape and Visual Impact Assessment (LVIA) (i.e. the Regulatory Background);

¹ Environmental Protection Agency (2017). Guidelines on the Information to be Contained in Environmental Impact Assessment Reports. Draft dated August 2017. Environmental Protection Agency, Johnstown Castle Estate, Co. Wexford

² Landscape Institute and Institute of Environmental Management & Assessment (2013) *Guidelines for Landscape and Visual Impact Assessment*. Third Edition, Routledge.

- a description of the landscape and the visual baseline, including the identification of relevant landscape and visual receptors (i.e. the Receiving Environment);
- a description of the aspects of the development which are likely to cause landscape and those likely to cause visual effects, an assessment of landscape and visual receptor sensitivity and the magnitude of the landscape and visual effects, as well as their combined level of significance (i.e. the Impact Assessment);
- a description of additional measures required to reduce/avoid any significant landscape and visual effects identified (i.e. the Mitigation Measures); and
- a summary of the degree of the landscape and visual effects, following the implementation of the mitigation measures (i.e. the Residual Impact Assessment).

13.6 Wherever possible, identified effects are quantified, however the nature of landscape and visual impact assessment requires interpretation by professional judgement. Please refer to **Appendix 13-A** at the end of this chapter, for the detailed methodology used in this assessment, which is illustrated by the following Figures:

- **Figure 13-1:** Landscape Baseline and Viewpoint Locations;
- **Figure 13-2:** Zone of Theoretical Visibility (ZTV) Map;
- **Figure 13-3:** Viewpoints A & B;
- **Figure 13-4:** Viewpoints C & D; and
- **Figure 13-5:** Viewpoints E & F.

Consultations / Consultees

- 13.7 A number of pre-planning consultation meetings have been held between officials of Sligo County Council and representatives of SLR Consulting Ireland and Lagan Materials Limited.
- 13.8 At the meetings, details of the proposed development were presented and issues likely to be of interest or concern were identified and discussed.
- 13.9 Following a review of published development plans and the site survey, it was considered that there was no requirement for a separate formal consultation to be carried out regarding the potential landscape and visual effects of the proposed development.

Contributors / Author(s)

- 13.10 The assessment including site work and completion of figures was carried out by Anne Merkle, an Associate Landscape Architect with SLR Consulting Ireland. Anne graduated from the University of Applied Sciences in Nürtingen (Germany) in Landscape Architecture (Dipl.-Ing. (FH)), in 2002. She has since gained 18 years' experience working for landscape consultancies in Ireland, specialising in Landscape and Visual Impact Assessments for a wide range of projects, including quarries, waste recovery facilities, wind farms, powerlines and mixed developments. In 2017, Anne completed an

MSc in Biodiversity and Land Use Planning (at NUIG). She is a full member of the Irish Landscape Institute (MILI) since 2005.

Limitations / Difficulties Encountered

- 13.11 No difficulties were encountered during the desktop study, field survey or in the preparation of this report.

ADDITIONAL INFORMATION

- 13.12 As outlined in Chapter 1, a planning application was submitted to Sligo County Council (Plan File Ref. No. 18/345 / ABP Ref. 305821-19) in August 2018 for similar development to that proposed as part of this application. In October 2019 Sligo County Council granted planning permission for the development (subject to 23 no. conditions). 2 no. third party appeals of the decision by Sligo County Council to grant permission for the proposed quarry development were made to An Bord Pleanála (ABP-305821-19). An Bord Pleanála refused permission for the proposed development on the 30th June 2020 for the 2 no. reasons – refer to Chapter 1 for further details.
- 13.13 In order to comprehensively address the reasons for refusal, and further comments contained within the An Bord Pleanála Inspectors Report a number of additional surveys / site investigations, field work and assessments have been carried out.
- 13.14 This Chapter 13 of the EIAR has been updated as follows:
- Additional field surveys have been undertaken.
 - The landscape and visual impact assessment has been updated to take account of the revised planning application area to include the aggregate processing area that lies to the east of the local road and bisects the application site. For example, the zone of theoretical visibility has been updated for the revised application area.

REGULATORY BACKGROUND

- 13.15 The following paragraphs set out the regulatory background with regard to LVIA in Ireland in general and the site-specific planning background relevant to the proposed development, in particular.

Legislation

- 13.16 There is no specific legislation relevant to this section of the EIAR. However, the information provided within this chapter is informed by the European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018³.

³ European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018: <http://www.irishstatutebook.ie/eli/2018/si/296/made/en/pdf>

- 13.17 Also, Ireland ratified the European Landscape Convention⁴, which promotes the protection, management and planning of landscapes. The National Landscape Strategy for Ireland 2015-2025⁵ was published “to ensure compliance with the European Landscape Convention and establish principles for protecting and enhancing the landscape while positively managing its change”.
- 13.18 Article 1a of the European Landscape Convention defines landscape as “*an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors*”. This definition has been included in the Planning and Development (Amendment) Act 2010, along with the requirement that objectives relating to landscape shall be included in development plans.

Planning Policy and Development Control

- 13.19 The Sligo County Development Plan 2017-2023 (SCDP)⁶ is the statutory plan detailing the development objectives/policies of the authority. Those policies/designations, with relevance to this assessment, are listed below. Refer to **Figure 13-1** – Landscape Baseline and Viewpoint Locations for the location and extent of the relevant designations.
- 13.20 In addition, the National Parks and Wildlife Service (NPWS) website⁷ was reviewed for protected nature conservation sites in proximity to the application area.

Landscape

- 13.21 Chapter 7 of the SCDP contains policies and objectives in relation to landscape. Section 7.4.3 of the Sligo CDP 2017-2023 refers to the Landscape Characterisation Map which formed part of previous County Development Plans including the CDP 2011-2017. This categorises the County’s landscapes according to the following:
- 13.22 Normal Rural Landscapes: “*areas with natural features (e.g. topography, vegetation) which generally have the capacity to absorb a wide range of new development forms – these are largely farming areas and cover most of the County. At the same time, certain areas located within normal rural landscapes may have superior visual qualities, due to their specific topography, vegetation pattern, the presence of traditional farming or residential structures. These areas may have limited capacity for development or may be able to absorb new development only if it is designed to integrate seamlessly with the existing environment.*”
- 13.23 Sensitive Rural Landscapes: “*areas that tend to be open in character, highly visible, with intrinsic scenic qualities and a low capacity to absorb new development – e.g. Knocknarea, the Dartry Mountains, the Ox Mountains, Aughris Head, Mullaghmore Head etc.*”
- 13.24 Visually Vulnerable Areas: “*distinctive and conspicuous natural features of significant beauty or interest, which have extremely low capacity to absorb new development - examples are the Ben Bulbin plateau, mountain and hill ridges, the areas adjoining Sligo’s coastline, most lakeshores etc.*”
- 13.25 Policies of relevance to this assessment contained in the Sligo CDP 2017-2023 are outlined below.

⁴ European Landscape Convention: <https://www.coe.int/en/web/conventions/full-list/-/conventions/rms/0900001680080621>

⁵ National Landscape Strategy for Ireland 2015-2025: <https://www.chg.gov.ie/app/uploads/2015/07/N-Landscape-Strategy-english-Web.pdf>

⁶ Sligo County Development Plan 2017-2023: <https://www.sligococo.ie/cdp/>

⁷ National Parks and Wildlife Service: <https://www.npws.ie/>

13.26 **Policy P-LCAP-1:** *“Protect the physical landscape, visual and scenic character of County Sligo and seek to preserve the County’s landscape character.*

Planning applications that have the potential to impact significantly and adversely upon landscape character, especially in Sensitive Rural Landscapes, Visually Vulnerable Areas and along Scenic routes, may be required to be accompanied by a visual impact assessment using agreed and appropriate viewing points and methods of assessment.”

13.27 **Policy P-LCAP-2:** *“Discourage any development that would be detrimental to the unique visual character of designated Visually Vulnerable Areas.”*

13.28 **Policy P-LCAP-4:** *“Strictly control new development in designated Sensitive Rural Landscapes while considering exceptions that can demonstrate a clear need to locate in the area concerned. Ensure that any new development in designated Sensitive Rural Landscapes:*

- *does not impinge in any significant way on the character, integrity and distinctiveness of the area;*
- *does not detract from the scenic value of the area;*
- *meets high standards of siting and design; and*
- *satisfies all other criteria with regard to, inter alia, servicing, public safety and prevention of pollution.”*

Scenic Routes and Protected Views

13.29 The CDP refers to Scenic Routes as *“public roads passing through or close to Sensitive Rural Landscapes, or in the vicinity of Visually Vulnerable Areas, and affording unique scenic views of distinctive natural features or vast open landscapes. In addition to remote views, scenic routes have often a distinctive visual character conferred by old road boundaries, such as stone walls, established hedgerows, lines of mature trees, adjoining cottages or farmyards together with their traditional, planted enclosures etc., all of which warrant protection.”*

13.30 The Policy in regard to Scenic Routes is set out in **Policy P-LCAP-3** which states *“Preserve the scenic views listed in Appendix F and the distinctive visual character of designated Scenic Routes by controlling development along such Routes and other roads, whilst facilitating developments that may be tied to a specific location or to the demonstrated needs of applicants to reside in a particular area. ...”*

13.31 The Scenic Routes with Scenic views to be preserved as documented in the SCDP under Policy P-LCAP-3 that occur within the study area are tabulated below and illustrated in **Figure 13-1 – Landscape Baseline and Viewpoint Locations**.

**Table 13-1
Scenic Routes**

ID	Name	View Details
4	N4 Collooney By-Pass from northern roundabout at Collooney to Carrowroe.	Views of Ballysadare Bay, Knocknarea, Union Wood, Slieve Daeane, Slieve Dargan.

ID	Name	View Details
12	R284 from Carrowroe to junction with road L-3605 north of Ballygawley.	Views of Ballygawley Lough, Slieve Dargan and Slieve Daeane.
14	R287 from Carrowroe to junction with road L-3605 at Correagh.	Views of Lough Gill, Slish Wood, Slieve Dargan, Slieve Daeane and Killery Mountain.
36	L3602 along Garvoge River and Lough Gill from Sligo to junction with R287	Views of Garvoge River and Lough Gill.

Extractive Industry Policy

- 13.32 Section 4 of the CDP contains a number of relevant policies with regard to the extractive industry as follows.
- 13.33 **Policy P-MEQ-2** *“Ensure that extraction and associated processes are carried out in a sustainable manner, which minimises the impact on residential amenities, natural environment and water quality, and do not impinge on existing rights-of-way or walking routes.”*
- 13.34 **Policy P-MEQ-3** *“Seek the reuse of worked out quarries for recreational, industrial, ecological and other uses, following appropriate restoration.”*

Protected Structures

- 13.35 Chapter 12 of this EIAR documents the assessment of effects on protected structures within the study area.

Protected Nature Conservation Sites

- 13.36 A number of protected sites are located within the study area. The closest of these is the Lough Gill Special Area of Conservation (SAC) and proposed Natural Heritage Area (pNHA), which is located approximately 365m northeast of the application area. The Ballygawley Lough pNHA is located approximately 2.5km south west of the site. Further detail on these sites is provided in EIAR Chapter 4 – Biodiversity.

Guidelines

- 13.37 This landscape and visual impact assessment was undertaken based on the Landscape Institute and Institute of Environmental Management & Assessment **Guidelines for Landscape and Visual Impact Assessment (Third Edition, 2013, published by Routledge; hereafter referred to as GLVIA3).**
- 13.38 The report format and some of the descriptions of effects are based on the **Guidelines on the Information to be contained in Environmental Impact Assessment Reports (Draft),** published by the Environmental Protection Agency (EPA) in August 2017.

Technical Standards

- 13.39 Photography and visual representations are based on the Landscape Institute – Technical Guidance Note 06/19 – ‘Visual Representation of Development Proposals’. However, since there is no Irish standard/guidance and in our experience a less stringent approach to visual representations is acceptable in Ireland, it is considered sufficient to provide annotated viewpoint photography only

(i.e. Type 1 in said guidance), despite this LVIA forming part of an EIAR. It is further considered sufficient to illustrate two viewpoints on one A3 sized sheet.

- 13.40 No other specific technical standards were referred to as part of this landscape and visual impact assessment.

Significant Risks

- 13.41 There are no known significant risks to human health or environmental effects, which may occur in relation to this landscape and visual impact assessment.

RECEIVING ENVIRONMENT

Study Area

- 13.42 A study area of approximately 3km surrounding the application area was identified following the desk top study and the preparation of the zone of theoretical visibility (ZTV) mapping (refer to **Figure 13-2**). It should be noted that the visual envelope, i.e. the area from where the application site is visible, was found to be smaller than the 3km radius study area, due largely to the visual screening afforded by existing topography and vegetation.

Baseline Study Methodology

- 13.43 Refer to **Appendix 13-A** at the end of this chapter for information on the selection of landscape and visual receptors.

Viewpoints

- 13.44 Refer to **Figures 13-3, 13-4 & 13-5** for the six selected representative and illustrative viewpoints (VP A-F). All photographs were taken in November 2020, using a Nikon D610 digital SLR camera, with a fixed 50mm lens. The nature of some of the views was of relatively wide panoramas and it was, therefore, considered beneficial to present the photographs in this way. The panoramic views consist of two to four photographic frames merged together using *Adobe Photoshop* software. It should be noted that photography is a tool to assist in the visualisation process and cannot be expected to replicate the actual view that would be attained on the ground.

Sources of Information

- 13.45 The desktop study and field work were supported by, *inter alia*:
- Sligo County Development Plan 2017-2023;
 - digital as well as paper (Ordnance Survey Ireland) mapping at different scales; and
 - information available on the internet (such as information on recreational facilities and nature conservation sites).

Field Survey

- 13.46 A detailed site survey was carried out on 26th November 2020 in partially cloudy, but bright conditions. Visibility was good. The assessment concentrated on the publicly accessible areas such as the road and public footpath networks, residential and outdoor recreational areas.

Landscape Baseline

Landscape Character of the Application Site and its surroundings

- 13.47 The application area is located south west of the small settlement of Aghamore, west of Aghamore Bay on the westernmost edge of Lough Gill. It comprises an existing quarry void and processing area, set within farmland at elevations ranging from 15m AOD with the processing area, up to 34m AOD along the western boundary of the quarry. The site, together with much of the farmed landscape of the Study Area is categorised as a Normal Rural Landscape according to the Landscape Characterisation Map in the SCDP. A number of overhead powerlines cross the farmland close to the western site boundary. Two regional and several local roads featuring individual and clusters of dwellings surround the site. The regional road are the R287 located approximately 190m to the north east of the site and the R284 540m to west.

Landscape Character of the study area

- 13.48 The landscape immediately surrounding the site and in the much of the northern and western part of the study area comprises undulating farmland with a variable field pattern which is well defined by hedgerows with individual mature trees. Approximately 1.5km to the north, the suburban edge of the town of Sligo, featuring residential areas and some larger scale buildings associated with industrial or commercial uses are present. Elevation in the farmed landscape within the study area varies between approximately 30m in the vicinity of the application area to just over 100m AOD, 1.5km to the north. A number of overhead powerlines extend south and south west across the landscape from an existing substation on the R287 regional Road. The farmland and suburban areas are categorised as a Normal Rural Landscape.
- 13.49 The eastern part of the study area features the Lakeland landscape associated with Lough Gill which is fringed with mature wooded vegetation. Much of the shoreline is categorised as a sensitive rural landscape, with some sections also classed as Visually Vulnerable.
- 13.50 The southern part of the study area features an upland landscape associated with Slieve Dargan and Slieve Daeane and associated summits which collectively form a ridgeline with a south west to north east orientation. This mountain ridgeline overlooks Lough Gill, specifically Aghamore Bay and also the application site from the south and comprises rough terrain with rock outcrops and scant woody vegetation reaching maximum elevations of 263 and 275m AOD at Slieve Dargan and Slieve Daeane respectively. The whole mountain range is categorised as a Sensitive Rural Landscape, while the ridgelines are categorised as Visually Vulnerable. This area presents a dominating, distinctive skyline backdrop to the farmland to the north and Lough Gill.

Outdoor Recreational Facilities within the Study Area

- 13.51 The North West Trail Cycle Route (<http://www.cycleni.com/102/north-west-trail/>) passes the application area within 240m to the east, as it follows the roads along the shores of Lough Gill.

- 13.52 The Sligo Way long distance walking route passes the application area approximately 1.5km to the south east. It should however be noted that this walk is entirely located to the south east of the ridgeline formed by Slieve Dargan, Slieve Daeane and other highpoints, i.e. the side facing away from the application area.
- 13.53 A number of other local signposted walking routes are located within the 3km study area, along the shores of Lough Gill.

Visual Baseline

General Visibility

- 13.54 The visibility of the application area was initially assessed by a desktop study of OSI Discovery Maps (1:50,000) and available aerial photography. This was followed by 3D computer modelling and calculation of the zone of theoretical visibility (ZTV), using LSS (McCarthy Taylor) software, in accordance with the methodology provided in **Appendix 13-B** at the end of this section.
- 13.55 The ZTV was calculated for both the proposed deepened extraction area, as well as the section of the processing area included within the application area. It should be noted that the ZTV mapping is based on a bare terrain; that is, the computer model does not include built structures or vegetation, with the exception of the vegetation immediately surrounding the site, which was included on this occasion. Therefore, while the ZTV illustrates the screening provided by the site boundary vegetation, the extent of visibility which is illustrated would be further reduced if buildings and vegetation in the wider area were included in the model.
- 13.56 In SLR's experience, views from within areas with a visibility of a subtended vertical angle of up to 0.4 degrees tend to be screened by hedgerows and other vegetation (if present) and/or built structures in an urban environment. These areas are, therefore, coloured in shades of grey on the ZTV mapping, in order to differentiate them from the other areas of more probable visibility, which are marked in shades of yellow, orange and red.
- 13.57 The resulting ZTV is depicted on **Figure 13-2** and indicates that the application area is potentially most visible from the mountain landscape associated with Slieve Dargan and Slieve Daeane, up to 2km to the south and east of the site and from the elevated areas at the southern edge of Sligo Town, in the vicinity of Tullynagracken and Carns, within 2km to the north of the site. It should be noted that large parts of these areas of visibility cover inaccessible steep mountain slopes and not publicly accessible farmland.
- 13.58 The ZTV further indicates potential visibility of the application area, albeit to a lesser extent, from locations within 2km to the north west and south west, as well as up to 5km to the north east on Lough Gill (i.e. areas in shades of grey). During the site survey it was confirmed that due to dense hedgerows within the farmland areas to the north west and south west and due to abundant woodland vegetation on the south western shores of Lough Gill, there is no inter-visibility between the application area and these areas shaded in grey. This is illustrated by **Viewpoint F** on **Figure 13-5**.
- 13.59 The site survey further revealed that roadside/intervening vegetation restricts views of the application area in many of the areas shaded in yellow, orange and red on the ZTV mapping. A small section of the application area, however neither the existing quarry, nor the processing area, is visible from a short section of the local road to the south west of the site entrance (refer to **Viewpoint A** on **Figure 13-3**).

- 13.60 The upper sections of the existing quarry void are visible from a number of locations along and in the vicinity of the local road heading in a north western direction towards Sligo town from the settlement of Aghamore (i.e. the L3602). In these views the existing processing area is screened by intervening vegetation (refer to **Viewpoints B, C & D** on **Figures 13-3 & 13-4**).
- 13.61 In a number of views along the local road to the south of the highpoint in the townland of Carns, approximately 1.3km north of the application area, the upper sections of the existing quarry void, as well as parts of the processing area are visible (refer to **Viewpoint E** on **Figure 13-5**).
- 13.62 Due to the bare rocky terrain on the northern slopes of Slieve Dargan and Slieve Daeane, the existing quarry void and processing area are expected to be openly visible, as indicated by the ZTV mapping (refer to **Figure 13-2**). However, due to the inaccessibility of this area, this could not be confirmed. At the same time, this inaccessibility ensures that there are no visual receptors affected in this area.

Sensitive Receptors

Landscape Receptors

- 13.63 The components of the landscape that are likely to be affected by the proposed development, i.e. the landscape receptors, are the:
- **undulating farmland landscape** of the site and to its north and west (i.e. the ‘Normal Rural Landscapes’);
 - **lake lands landscape** of Lough Gill (including areas of ‘Sensitive Rural Landscapes’ and ‘Visually Vulnerable Areas’); and the
 - **mountainous landscape** surrounding Slieve Dargan and Slieve Daeane (i.e. a ‘Sensitive Rural Landscape’ with a skyline that is a ‘Visually Vulnerable Area’); and
- 13.64 It should be noted that since the proposed works will take place within the existing established quarry and processing area, no characteristic individual landscape elements, such as hedgerows, will be affected. A small area of emerging scrub will be removed to facilitate the proposed settlement lagoon; however, this area does not contribute to the overall landscape character and is therefore not considered further.

Visual Receptors

- 13.65 The receptors with views of the application area consist of road users and local residents. Those experiencing similar views of the application area are placed into Visual Receptor Groups (VRGs). The location and extent of each of the VRGs is indicated on **Figure 13-2** and described in **Table 13-2** below. The table further lists the types of receptors present in each VRG, describes the nature of views/visual amenity within the areas and lists the representative viewpoints provided (refer to **Figures 13-3, 13-4 & 13-5**).

Table 13-2
Visual Receptor Groups (VRG)

VRG	Location / Extent	Types of Receptors	Nature of Views / Visual Amenity
1	Approximately 250m long stretch along local road to the south west of the entrance to the application area.	Approx. 3 residential properties and road users within the area.	<p>Close distance (0-50m) view north towards sloping agricultural land, some of which forms part of the application area. The quarry boundary post & wire fence is visible along the skyline, the quarry void is however screened by topography.</p> <p>Medium visual amenity, due short distance of views of undulating rural agricultural land and presence of manmade features (e.g. road, properties, telegraph/electricity poles, walls).</p> <p>Viewpoint A represents a typical view.</p>
2	Intermittently along an approximately 1,400m long stretch of the local road at Tullynagracken and adjoining properties/minor roads.	Approx. 15-20 residential properties and road users within the area.	<p>Long distance panoramic views over undulating farmland, towards the mountain range associated with Slieve Dargan and Slieve Daeane.</p> <p>The upper sections of the existing quarry void are visible as a narrow band in the middle ground of all views, embedded into the farmland and partially screened by intervening vegetation. The processing area forming part of the application area is fully screened by vegetation.</p> <p>Medium/high visual amenity, due to the scenic panoramic views dominated by the mountain range, reduced somewhat by the presence of many residential/farm properties and electricity poles at the lower elevations in the foreground.</p> <p>Viewpoints B, C & D represent typical views.</p>
3	Approximately 450m long stretch along local road at Carns and a number properties along a minor road to the south.	Approx. 7 residential properties and road users, including recreational visitors within the area.	<p>Long distance panoramic views over undulating farmland, towards the mountain range associated with Slieve Dargan and Slieve Daeane (note: scenic views towards Lough Gill are available from the same location, in a south eastern direction).</p> <p>The upper sections of the existing quarry void are visible as a narrow band in the middle ground of all views, embedded into the farmland and partially screened by intervening vegetation. The processing area forming part of the application area is partially visible, amongst dense vegetation.</p> <p>Medium/high visual amenity, due to the scenic panoramic views dominated by the mountain range, reduced somewhat by the presence of residential/farm properties and electricity poles at the lower elevations in the foreground.</p> <p>Viewpoint E represents a typical view.</p>

IMPACT ASSESSMENT

Evaluation Methodology

13.66 Refer to **Appendix 13-A** at the end of this chapter for information on the assessment of landscape and visual sensitivity, the assessment of the magnitude of change in the landscape and on views, as well as the assessment of landscape and visual effects and their significance.

Operational Stage Landscape Effects

13.67 The operational stage of the proposed development, for the purpose of this assessment, is considered to include the extraction and restoration period, i.e. the 12 years proposed life of the development.

13.68 Works resulting in potential landscape effects will include:

- rock extraction within the existing quarry void, resulting in deepening of the void;
- the construction of a settlement lagoon to the east of the quarry void; and
- the final restoration of the quarry void and processing area to a natural habitat, including flooded quarry void, woodland and hedgerow planting.

Landscape Sensitivity

13.69 **Table 13-3** below describes the value attached to each of the identified landscape receptors, as well as their susceptibility to the changes caused by the proposed development.

Table 13-3
Sensitivity of Landscape Receptor

Landscape Receptor	Value	Susceptibility	Overall Sensitivity
Undulating Farmland Landscape	<p>No specific 'landscape' designation. Presence of a number of scenic routes, views from which are however focused on the mountainous area to the south and Lough Gill to the east.</p> <p>The undulating farmland does not have a striking landform and is not rare in the local area. No natural conservation areas are present and the landscape is influenced by man-made elements. The value level of this landscape is therefore assessed as</p> <p style="text-align: center;">COMMUNITY</p>	<p>Designated as 'Normal Rural Landscape' in the SCDP which is defines as an area <i>"with natural features (e.g. topography, vegetation) which generally have the capacity to absorb a wide range of new development forms"</i>.</p> <p>Considering the presence of abundant hedgerow and woodland vegetation in the local area, as well as the proposed development being confined within the existing quarry development, which is a long-established element in the local landscape, the susceptibility of the farmland landscape is assessed as</p> <p style="text-align: center;">LOW</p>	LOW
Lake lands landscape	<p>Presence of local authority designated 'Sensitive Rural Landscapes' and 'Visually Vulnerable Areas', some scenic routes and nature conservation sites. The value level of this landscape is therefore assessed as</p> <p style="text-align: center;">LOCAL AUTHORITY</p>	<p>'Sensitive Rural Landscape' defined in SCDP as an area with <i>"a low capacity to absorb new development"</i>.</p> <p>'Visually Vulnerable Area' defined in SCDP as an area with <i>"an extremely low capacity to absorb new development"</i>.</p> <p>However, considering the physical separation from the proposed development, the abundant screening vegetation, as well as the proposed development being confined within the existing quarry development, which is a long-established element in the local landscape, the susceptibility of the lake lands landscape is assessed as</p> <p style="text-align: center;">LOW</p>	LOW
Mountainous landscape	<p>Presence of local authority designated 'Sensitive Rural Landscapes' and 'Visually Vulnerable Areas' and some scenic routes. The value level of this landscape is therefore assessed as</p> <p style="text-align: center;">LOCAL AUTHORITY</p>	<p>'Sensitive Rural Landscape' defined in SCDP as an area with <i>"a low capacity to absorb new development"</i>.</p> <p>'Visually Vulnerable Area' defined in SCDP as an area with <i>"an extremely low capacity to absorb new development"</i>.</p> <p>However, considering the physical separation from the proposed development, the dominance of the mountainous range over the adjoining farmland, as well as the proposed development being confined within the existing quarry development, which is a long-established element in the local landscape, the susceptibility of the mountainous landscape is assessed as</p> <p style="text-align: center;">LOW</p>	LOW

Magnitude of Landscape Change

13.70 **Table 13-4** below describes the size and scale, geographical extent and duration/reversibility of the landscape change, all of which contribute to the assessment of the magnitude of this change.

Table 13-4
Factors of Magnitude of Landscape Change

Factor	Description	Level of effect
Size & Scale	All of the proposed works will be contained within the existing long-established quarry and processing areas. Except for a small area of scrub, no vegetation removal will be required and there will be an imperceptible change to the landform, due to the lowering of the quarry floor and the construction of the settlement lagoon. Overall, there will be a negligible change in landscape character, as the key characteristics will not be affected.	NEGLIGIBLE
Geographical Extent	The changes will influence the landscape at the site level only.	NEGLIGIBLE
Duration/ Reversibility	The operational stage (rock extraction + final restoration) will last for a total of 12 years and is theoretically reversible. While the changes to the landform will remain, the site will be restored to a natural habitat, including additional hedgerow and woodland planting, which will contribute to the local landscape characteristics.	MEDIUM-TERM REVERSIBLE

13.71 The magnitude of landscape change, due to the proposed development, is judged to be **NEGLIGIBLE**, as the negligible scale and negligible geographical extent are deemed to offset the medium-term duration of the effect.

Assessment of Landscape Effects and Significance

13.72 The sensitivity of all landscape receptors (i.e. Undulating Farmland Landscape, Lake Lands Landscape & Mountainous Landscape) was assessed as LOW. The magnitude of landscape change was assessed as NEGLIGIBLE. In combination the landscape effect is judged to be **NEGLIGIBLE**, i.e. not a significant landscape effect.

Post – Operational Stage Landscape Effects

13.73 The post-operational stage of the proposed development, for the purpose of this assessment, is considered to be the period following the cessation of the extraction activities and the completion of the restoration works. The landform within the rock quarry will remain permanently changed. However, the restoration to a natural habitat of the overall site, will ensure that the landscape effects will remain **NEGLIGIBLE** at the post-operational stage.

Operational Stage Visual Effects

13.74 For the duration of the operational stage, i.e. the extraction and restoration stage, the proposed development will be screened in views from the vast majority of locations within the study area, including all locations beyond the site boundary to the west, north west, south west and north east.

Visual effects will be experienced only in views from the three VRGs identified earlier in this section (refer to **Table 13-2 and Figure 13-2**).

- 13.75 **VRG 1:** In views from a short section of the local road to the south west of the site entrance, as well as associated residential properties, some of the proposed woodland/hedgerow planting along the southern and western boundary of the quarry area will be visible. This planting will have a beneficial effect, as it will strengthen the existing hedgerow/woodland landscape elements. Neither the proposed extraction works, nor any activities within the processing yard area will be visible by this VRG. Refer to **Viewpoint A**, on **Figure 13-3**.
- 13.76 **VRG 2:** In intermittent views from the local road to the north west of Aghamore, as well as associated minor roads and residential properties, some of the proposed woodland/hedgerow planting along the boundaries of the quarry area will be visible in the middle ground of views. This planting will have a beneficial effect, as it will strengthen the existing hedgerow/woodland landscape elements. Neither the proposed extraction works, nor any activities within the processing yard area will be visible by this VRG. Refer to **Viewpoint B, C & D**, on **Figures 13-3 & 13-4**.
- 13.77 **VRG 3:** In views from a short section of the local road to the south of the highpoint at Carns, as well as associated residential properties, some of the proposed woodland/hedgerow planting along the boundaries of the quarry area will be visible in the middle ground of views. This planting will have a beneficial effect, as it will strengthen the existing hedgerow/woodland landscape elements. Also, some of the activities within the processing yard area will be distantly visible, while the proposed extraction works will be fully screened by topography. Refer to **Viewpoint E**, on **Figure 13-5**.
- 13.78 It should be noted that no static lighting will be installed within the quarry void. Any mobile lighting on the machinery used within the quarry is unlikely to become visible, due to the low elevation of the works in the quarry void. Existing static light sources within the processing yard area will be retained and will be used for a short durations in the winter time, when works take place during hours of darkness, within the permitted working hours. These lights will be visible amongst other lights illuminating the roads, properties and other commercial premises in the local area. Considering the presence of other light sources and the short duration those within the application area will be used, it is not considered that significant additional night-time light pollution will be produced due to the proposed development.

Visual Receptor Sensitivity

- 13.79 **Table 13-5** below describes the value placed on views from within each of the VRGs identified earlier (refer to **Table 13-2** above). It further describes the susceptibility of each of the identified Visual Receptor Groups (VRGs) to change. The table further describes the value placed on views from within each of the VRGs and makes a judgement of the overall sensitivity of each VRG.

Table 13-5
Sensitivity of Visual Receptors

VRG	Value	Susceptibility	Sensitivity
1	No protected or locally promoted views towards the application area. LOW	Residents: HIGH Road users, where views are incidental to the journey: LOW	MEDIUM LOW
2	No protected or locally promoted views towards the application area. LOW	Residents: HIGH Road users, where views are incidental to the journey: LOW	MEDIUM LOW
3	The OSI Discovery Series Mapping promotes a scenic view along this road (note: the focus of this view is Lough Gill and the mountain range associated with Slieve Dargan and Slieve Daeane). HIGH	Residents/Recreational Visitors: HIGH Road users, where views are incidental to the journey: LOW	HIGH MEDIUM

Magnitude of Visual Change

13.80 **Table 13-6** below describes the magnitude of change to views from each of the VRGs, in terms of the size and scale, geographical extent and duration/reversibility.

Table 13-6
Factors of Magnitude of Visual Change

VRG	Description of Factors of Visual Change	Level of Effect	Magnitude
1	Size & Scale: The visual changes in views from this VRG (i.e. hedgerow/woodland planting) will take place at a close distance, in the neighbouring field, along the existing field boundaries . As the proposed planting will be an enhancement of the existing vegetation and will be of similar type, there will be no new elements added to the views. The view composition will be slightly altered , as more of the neighbouring field will be screen, however the visual amenity of existing views will not change .	SMALL	SLIGHT (beneficial , due to the enhancement of existing landscape elements)
	Geographical Extent: The views are available from a very short linear route , i.e. 250m along the local road to the south west of the site entrance, as indicated on Figure 13-2 . There will be a small number of viewers as this road is only infrequently. Three properties are located within this VRG.	NEGLIGIBLE	
	Duration/Reversibility: The changes within the application area will be visible for the duration of the operational stage, i.e. a 12 years period .	MEDIUM-TERM REVERSIBLE	

VRG	Description of Factors of Visual Change	Level of Effect	Magnitude
2	<p>Size & Scale:</p> <p>The visual changes in views from this VRG (i.e. hedgerow/woodland planting) will take place at distances between 0.3-1.5km within a narrow band in the middle ground of the available views.</p> <p>As the proposed planting will be an enhancement of the existing vegetation and will be of similar type, there will be no new elements added to the views and the composition and visual amenity of existing views will not be altered.</p>	NEGLIGIBLE	<p>NEGLIGIBLE</p> <p>(as the negligible size/scale is considered the overriding factor;</p> <p>beneficial, due to the enhancement of existing landscape elements)</p>
	<p>Geographical Extent:</p> <p>The views are available intermittently from a 1,400m long linear route, along the local road to the north west of Aghamore, as indicated on Figure 13-2. There will be a small number of viewers as views from the road are glimpsed only, and views from the 15-20 associated properties area partially restricted by intervening vegetation.</p>	SMALL	
	<p>Duration/Reversibility:</p> <p>The changes within the application area will be visible for the duration of the operational stage, i.e. a 12 years period.</p>	MEDIUM-TERM REVERSIBLE	
3	<p>Size & Scale:</p> <p>The visual changes in views from this VRG (i.e. hedgerow/woodland planting & activities within the processing yard area) will take place at distances between 1.1-1.5km within a narrow band in the middle ground of the available views.</p> <p>The proposed planting will be an enhancement of the existing vegetation and will be of similar type. The activities within the processing yard area will be barely noticeable at this distance and will be similar to other commercial/activities in the vicinity of the application area and what previously took place within the site. Therefore, no new elements will be added to the views and the composition and visual amenity of existing views will not be altered.</p>	NEGLIGIBLE	<p>NEGLIGIBLE</p> <p>(as the negligible size/scale is considered the overriding factor;</p> <p>neutral, as vegetation enhancement and visibility of processing activities are deemed to offset each other)</p>
	<p>Geographical Extent:</p> <p>The views are available from a short linear route, i.e. 450m along the local road to the south of the highpoint at Carns, as indicated on Figure 13-2. There will be a small number of viewers as this road is mostly used by local residents (note: the scenic viewpoint, while marked on OSI mapping, does not appear to be frequently visited; also, it is not locally signposted and no official parking facilities are provided). Seven properties are located within this VRG.</p>	NEGLIGIBLE	
	<p>Duration/Reversibility:</p> <p>The changes within the application area will be visible for the duration of the operational stage, i.e. a 12 years period.</p>	MEDIUM-TERM REVERSIBLE	

Significance of Visual Impact

- 13.81 The sensitivity of the residents within **VRG 1** was assessed as MEDIUM and that of the road users as LOW. The magnitude of visual change on views for VRG 1 was assessed as SLIGHT. In combination the visual effect on residents is judged to be **MINOR** and that on road users as **MINOR-NEGLIGIBLE**. Both are considered beneficial and not significant visual effects.
- 13.82 The sensitivity of the residents within **VRG 2** was assessed as MEDIUM and that of the road users as LOW. The magnitude of visual change on views for VRG 2 was assessed as NEGLIGIBLE. In combination the visual effect on residents is judged to be **MINOR-NEGLIGIBLE** and that on road users as **NEGLIGIBLE**. Both are considered beneficial and not significant visual effects.
- 13.83 The sensitivity of the residents and recreational uses within **VRG 3** was assessed as HIGH and that of the road users as MEDIUM. The magnitude of visual change on views for VRG 3 was assessed as NEGLIGIBLE. In combination the visual effect on residents/cyclists is judged to be **MINOR** and that on road users as **MINOR-NEGLIGIBLE**. Both are considered neutral and not significant visual effects.

Post – Operational Stage Visual Effects

- 13.84 On completion of all extraction and restoration works (i.e. the operational stage), the visibility of the application area will return to its current state, with some enhanced vegetation surrounding the site. The existing upper quarry face will continue to be visible but will also continue to weather and crevices will be colonised by locally occurring grass and scrub species. In time the appearance of the rock face will be softened and more and more integrate into the surrounding farmland landscape.
- 13.85 As a result, the visual effects will in time reduce to **NEGLIGIBLE** for all visual receptors during the post-operational stage.

Direct/Indirect Effects

- 13.86 All landscape and visual effects described above are direct effects. The proposed development is not considered to have indirect effects in landscape and visual terms, i.e. the proposed development is unlikely to cause consequential changes to the surrounding landscape character areas or to existing views of the landscape surrounding the application area.

Compliance with Planning Policies/Impact on Landscape Designations

Landscape

- 13.87 This landscape and visual impact assessment concluded that the effects on landscape character will be negligible and that the visual effects, due to the proposed development will be minor or less than minor for all visual receptors. Further to that, Visually Vulnerable Areas and Sensitive Rural Landscapes will not be affected. It is therefore considered that the proposed development is in compliance with the SCDP Landscape **Policies P-LCAP-1, P-LCAP-2 & P-LCAP-4**.

Scenic Routes

- 13.88 **Figure 13-2**, the ZTV mapping, indicates that there is very limited likelihood of visibility of the proposed development from any of the designated scenic routes within the study area (i.e. Scenic

Routes 4, 12, 14 & 36, refer to Figure 13-1 for their location). The site survey confirmed that roadside and intervening vegetation screens views towards the application area from these routes, in addition to topography. Therefore, the distinctive visual character of these scenic routes will not be affected by the proposed development, which is considered to be in compliance with SCDP Landscape **Policy P-LCAP-3**.

Extractive Industry Policy

- 13.89 Due to the location within an existing quarry development and associated screening provided by topography, as well as screening from boundary vegetation, the proposed development will not have impact on residential amenity. Further to that, there will be no visibility from any designated walking routes. The restoration of the quarry development will be to a natural habitat, which is a beneficial ecological after use. It is therefore considered that the proposed development is in compliance with the SCDP Extractive Industry **Policies Policy P-MEQ-2 & Policy P-MEQ-3**.

Outdoor Recreational Facilities

- 13.90 The proposed development will be neither visible from the North West Trail Cycle Route, nor from the Sligo Way or any other locally signposted walking routes. It will therefore not have any impact on outdoor recreational facilities within the study area.

Unplanned Events (i.e. Accidents)

- 13.91 It is highly unlikely that any unplanned events within the application area would result in noticeable landscape or visual impact.

Cumulative / Synergistic Impacts

- 13.92 There are no known existing developments or developments currently in the planning process that would result in cumulative landscape or visual impacts in combination with the proposed continuation of use of the existing quarry and processing area, as well as the proposed deepening of the quarry void.

Transboundary Impacts

- 13.93 The proposed development is not located in the vicinity of a national boundary. Therefore, transboundary landscape or visual impacts will not arise.

Interaction with Other Impacts

- 13.94 There are no known interactions with other impacts.

‘Do-nothing Scenario’

- 13.95 If no further works within the planning application area were carried out, the existing quarry, would be restored in line with the current restoration plan (Planning Reference No. 02/271), which would lead to a similar result to what is proposed, as part of the restoration of this development.

MITIGATION MEASURES

Operational Stage

- 13.96 The undulating topography of the application site and surrounding land, as well as the abundant hedgerows and woodland vegetation along the site boundaries and in the wider landscape are naturally mitigating factors, significantly reducing potential landscape and visual impacts.
- 13.97 A landscape and restoration plan forms part of this EIAR. The plan the restoration of the site to a natural habitat, on completion of all extraction works. The landscape/restoration proposals will consist of the following (refer to section 2 of the EIAR):
- Hedgerow and woodland planting, using native species, in advance of operations along the boundaries of the quarry area which, along with vegetation to be retained would further mitigate landscape and visual effects;
 - on completion of all extraction works: removal of all plant, buildings and stockpiles from the site;
 - breaking up and re-grading of the processing area and area to be left for natural recolonisation;
 - installation of fencing surrounding the quarry void for security reasons;
 - natural flooding of the quarry void and subsequent creation of a wetland habitat; and
 - leaving the remainder of the application area to natural recolonisation, thereby instigating a diversity of habitats.
- 13.98 No additional mitigation measures are considered necessary during the operational stage of the proposed development.

Post – Operational Stage

- 13.99 All restoration works will be completed during the operational stage of the development. It is anticipated that the site will substantially integrate with the surrounding landscape at the post-operational stage of the development and no further mitigation measures are therefore considered necessary at this stage.

RESIDUAL IMPACT ASSESSMENT

Operational Stage

- 13.100 As no additional mitigation measures are proposed during the operational stage, the residual levels of landscape and visual effects will be as per the assessment above. In summary, the assessment has found that the proposed development will have negligible landscape effects during the operational stage (i.e. levels of impact not considered to be significant).
- 13.101 The visual impact on views ranges from none for the majority of locations within the study area to minor or less than minor (i.e. impacts not regarded as significant) for a limited number of viewpoints immediately south and within 1.5km to the north of the application area.

Post – Operational Stage

- 13.102 As no additional mitigation measures are proposed during the post-operational stage, the residual landscape and visual effects will be as per the assessment above. In summary, on completion of all extraction and restoration works the predicted landscape and visual impacts will reduce to / remain at negligible.

MONITORING

- 13.103 There are no monitoring requirements, arising from this landscape and visual assessment.

REFERENCES

Environmental Protection Agency (August 2017) Guidelines on the Information to be contained in Environmental Impact Assessment Reports - Draft, EPA Ireland

The Landscape Institute with the Institute of Environmental Management and Assessment (2013) Guidelines for Landscape and Visual Impact Assessment, Third Edition, Routledge

The Landscape Institute (2019) Technical Guidance Note 06/19: Visual Representation of Development Proposals, Landscape Institute

APPENDICES

Appendix 13-A – Method used in Assessing Landscape and Visual Impact Effects

Introduction

Landscape and Visual Impact Assessment (LVIA) is a tool used to identify and assess the significance of the effects of development on “*landscape as an environmental resource in its own right and on people’s views and visual amenity*” (GLVIA3⁸, paragraph 1.1). Although it refers to landscape, GLVIA3 (paragraphs 2.6 - 2.8) also makes clear that the same principles apply to townscapes and seascapes. GLVIA3 is the main source of guidance in Ireland on the principles and processes of LVIA. Having signed and ratified the European Landscape Convention, the Irish government has obligations to deal with such matters. The guidance also takes into account the formal requirement for Environmental Impact Assessment in response to European Union Directives.

Landscape is a definable set of characteristics resulting from the interaction of natural, physical and human factors: it is a resource in its own right. Its assessment is distinct from visual assessment, which deals specifically with effects on the views and visual amenity of different groups of people at particular locations. GLVIA3 (paragraph 2.22) makes clear that these two elements, although inter-related, should be assessed separately and that the assessment should clearly demonstrate the difference between them.

As GLVIA3 (paragraph 2.23) states, professional judgement is an important part of the LVIA process: whilst there may be some scope for objective measurement of landscape and visual changes, much of the assessment must rely on qualitative judgements. It is critical that these judgements are based upon a clear and transparent method so that the reasoning can be followed and examined by others.

GLVIA3 sets out a framework for making judgements about the level of effects that may result from change or development. It describes a step by step approach in which: judgements about the value and susceptibility of the receptor are combined into a judgement about sensitivity; judgements about the size/scale of the effect, its geographical extent and its duration and reversibility are combined into a judgement about the magnitude of the effect; and finally the judgements about sensitivity of the receptor and the magnitude of the effect are combined to judge the level of the effect. If the assessment forms part of an EIA, a threshold may then be identified to show which effects are considered to be significant and which are not. In non-EIA appraisals this step is not required though levels of effect may be described in terms of their relative importance.

GLVIA3 is not prescriptive about exactly how the various judgments required in this framework should be made. This is a matter for individual practitioners to decide and explain. This document therefore sets out the criteria and definitions used by SLR, in both EIA and non-EIA landscape and visual assessments, to make judgements about levels of effects and their importance or significance.

⁸ Landscape Institute and Institute of Environmental Management and Assessment ‘Guidelines for Landscape and Visual Impact Assessment’ (Third Edition, April 2013)

Landscape Effects

Landscape, as defined in the European Landscape Convention, is “*an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors*”, (Council of Europe, 2000). Landscape does not apply only to special or designated places, nor is it limited to countryside.

GLVIA3 (paragraph 5.34) recommends that the effect of the development on landscape receptors is assessed. Landscape receptors are the components of the landscape that are likely to be affected by the proposed development, and can include individual elements (such as hedges or buildings), aesthetic and perceptual aspects (for example sense of naturalness, tranquillity or openness), or, at a larger scale, the character of a defined character area or landscape type. Designated landscapes, such as National Parks or Areas of Outstanding Natural Beauty (AONBs), may also be treated as landscape receptors, in which case attention is also given to effects on their special qualities.

This assessment is being undertaken because the proposed development has the potential to remove or add elements to the landscape, to alter aesthetic or perceptual aspects, and to add, remove or alter characteristics and thus potentially change overall character.

Judging landscape effects requires a methodical assessment of the sensitivity of the landscape receptors to the proposed development and the magnitude of effect which would be experienced by each receptor. The criteria and definitions used in making these judgements are set out below.

Landscape Sensitivity

The sensitivity of landscape receptors is assessed by combining assessments of the value attached to each receptor and the susceptibility of each receptor to the type of change which is proposed. (GLVIA3, paragraph 5.39).

Value Attached to Landscape Receptors

Landscape value is generally assessed as part of the baseline and is not influenced by the nature of the project, whereas susceptibility and overall landscape sensitivity form part of the detailed assessment of the effects and are specific to the particular project and its landscape context.

Landscape receptors may be valued at community, local, national or international level. Existing landscape designations provide the starting point for this assessment, as set out in Table 1 below.

The table sets out the interpretation of landscape designations in terms of the value attached to different landscape receptors. As GLVIA3 (paragraph 5.24) notes, at the local scale of an LVIA study area it may be found that the landscape value of a specific area may sometimes be different to that suggested by the presence or absence of a formal designation.

Table 1: Interpretation of Landscape Designations

Designation	Description	Value
World Heritage Sites, candidate World Heritage Site	Unique sites, features or areas identified as being of international importance according to UNESCO criteria. Consideration should be given to their settings especially where these contribute to the attributes of outstanding universal value for which such an area of landscape is valued.	International
National Parks	Areas of landscape identified as being of national importance. Consideration should be given to their settings especially where these contribute to the special qualities for which the landscape is valued.	National
Local Landscape Designations (such as Areas of High Amenity) included in local planning documents; or other landscapes of identified value	Areas of landscape identified as having value, which are either recognised at the local authority level by a local designation or other equivalent recognition of value OR are landscapes considered to have elevated value, having regard to the criteria in Table 2 below and/or by virtue of demonstrable physical attributes.	Local Authority
Undesignated landscapes	Landscapes which do not have any formal designation, and which are not considered to have demonstrable physical attributes that elevate their value, but which may be valued by local communities.	Community
Undesignated landscapes with negative attributes	Landscapes with no designations or demonstrable physical attributes that elevate their value, which are in poor condition or are degraded or fundamentally altered by presence of man-made structures judged to be intrusive.	Low

Where landscapes are not designated and where no other local authority guidance on value is available (for example, a Landscape Character Assessment that may be referred to in planning policies) an assessment is made by reference to criteria in the Table 2 below. This is based on Box 5.1 in GLVIA3. In such cases landscapes may be judged to be of local authority, community or low value on the basis of one or more of these factors.

An overall assessment is made for each receptor, based on an overview of the above criteria, to determine its value - whether for example it is comparable to a local authority landscape designation or similar, or whether it is of value to local people and communities. For example, an intact landscape in good condition, where scenic quality, tranquillity, and/or conservation interests make a particular contribution to the landscape, or where there are important cultural or historical associations, might be of equivalent value to a local landscape designation. Conversely, a degraded landscape in poor condition, with no particular scenic qualities or natural or cultural heritage interest is likely to be considered of limited landscape value.

Table 2: Factors Considered in Assessing the Value of Non-Designated Landscapes

Factor	Criteria
Landscape Quality	Intactness of the landscape demonstrated by, for example: presence of characteristic natural and man-made elements, which are generally in good condition; absence of significant incongruous elements (or elements having only localised or temporary effects).
Scenic Quality	General appeal of the landscape to the senses through, for example, combinations of some of the following: a clear and recognisable sense of place; striking landform or patterns of land cover; strong aesthetic qualities such as scale, form, colour and texture; simplicity or diversity; presence of ephemeral or seasonal interest.
Rarity	Presence of landscape character areas, types or features that are relatively rare in the local area.
Representativeness	Presence of locally important examples representing particular landscape character areas or types or particular characteristics/features/elements.
Conservation Interests	Presence of some of the following where they contribute positively to the experience of the landscape : natural heritage features, including geological or geomorphological features, wildlife, and habitats, including those that are designated as (proposed) Natural Heritage Areas and features such as veteran trees; cultural heritage features, including buildings, especially listed buildings, settlements including conservation areas, gardens, parkland and other designed landscapes, and historic landscape types which demonstrate the time depth of the landscape.
Recreation Value	The extent to which experience of the landscape makes an important contribution to recreational use and enjoyment of an area.
Perceptual Aspects including tranquillity	Presence of ephemeral or seasonal interest and/or notable sensory stimuli such as sounds and smells, qualities of light, or weather patterns. Opportunities to experience a sense of relative wildness and/or relative tranquillity in comparison with other local landscapes in the vicinity, demonstrated by degree of influence of overt man-made structures, level of visual and audible intrusions, and degree of perceived naturalness.
Associations	Evidence that the landscape is associated with locally important written descriptions of the landscape, or artistic representation of it in any media, or events in history, or notable people or important cultural traditions or beliefs.

Susceptibility of Landscape Receptors to Change

As set out in GLVIA3, susceptibility refers to the ability of the landscape receptor to “*accommodate the proposed development without undue adverse consequences for the baseline situation and/or the achievement of landscape planning policies and strategies*”. Judgement of susceptibility is particular to the specific characteristics of the proposed development and the ability of a particular landscape or feature to accommodate the type of change proposed, and makes reference to the criteria set out in Table 3 below. Aspects of the character of the landscape that may be affected by a particular type of development include landform, skylines, land cover, enclosure, human influences including settlement pattern and aesthetic and perceptual aspects such as the scale of the landscape, its form, line, texture, pattern and grain, complexity, and its sense of movement, remoteness, wildness or tranquillity. They will vary with the type of development in question.

For example, an urban landscape which contains a number of industrial buildings may have a low susceptibility to buildings of a similar scale and character. Conversely a rural landscape containing only remote farmsteads is likely to have a high susceptibility to large scale-built development.

Table 3: Landscape Receptor Susceptibility to Change

Susceptibility	Criteria
High	The landscape receptor is highly susceptible to the proposed development because the key characteristics of the landscape have no or very limited ability to accommodate it without transformational adverse effects, taking account of the existing character and quality of the landscape.
Medium	The landscape receptor is moderately susceptible to the proposed development because the relevant characteristics of the landscape have some ability to accommodate it without transformational adverse effects, taking account of the existing character and quality of the landscape.
Low	The landscape receptor has low susceptibility to the proposed development because the relevant characteristics of the landscape are generally able to accommodate it without transformational adverse effects, taking account of the existing character and quality of the landscape.

Defining Sensitivity

As noted above, the sensitivity of landscape receptors is defined in terms of the relationship between value and susceptibility to the proposed change, as indicated in Figure 1 and Table 4. These summarise the general nature of the relationship but the combination of the two factors is not formulaic. Table 4 provides examples of common combinations but is not comprehensive and other combinations may be judged appropriate. Professional judgement is applied on a case by case basis in determining the sensitivity of individual receptors with the diagram and table only serving as a guide.

Where, taking into account the component judgements about the value and susceptibility of the landscape receptor, sensitivity is judged to lie between levels, an intermediate assessment of high/medium or medium/low may be adopted. In a few limited cases a category of less than low (very low) may be used where the landscape is of low value and susceptibility is particularly low.

Figure 1: Example Levels of Sensitivity defined by Value and Susceptibility of Landscape Receptors

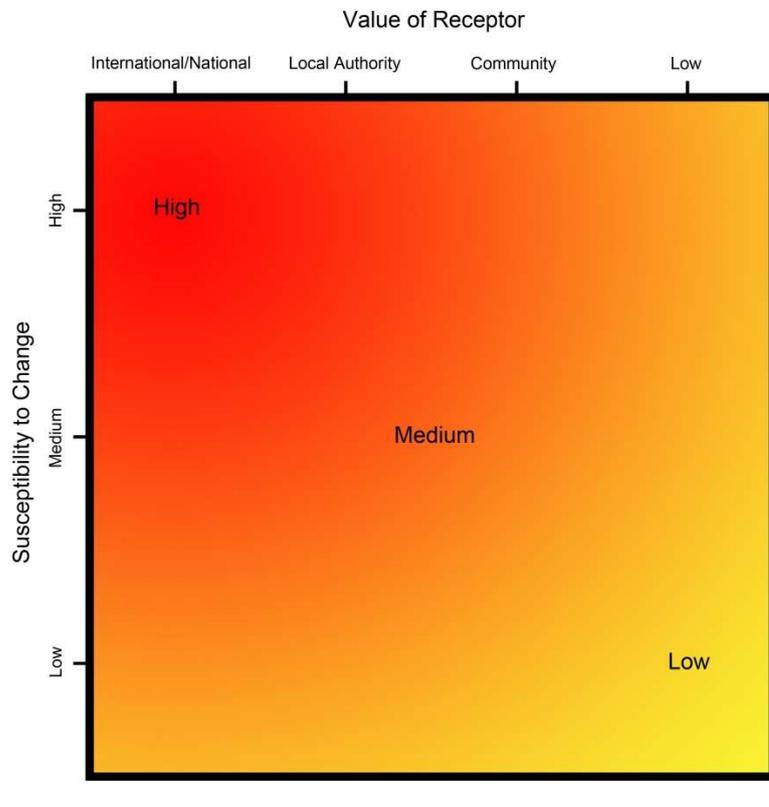


Table 4: Example Levels of Sensitivity defined by Value and Susceptibility of Landscape Receptors

Sensitivity	Criteria
High	The landscape receptor is of international or national value and is considered to have high susceptibility to the effects of the proposed development OR The landscape receptor is of national value and is considered to have medium susceptibility to the effects of the proposed development OR The landscape receptor is of local authority value and is considered to have high susceptibility to the effects of the proposed development

Sensitivity	Criteria
Medium	<p>The landscape receptor is of international or national value and is considered to have low susceptibility to the effects of the proposed development</p> <p>OR</p> <p>The landscape receptor is of local authority value and is considered to have medium susceptibility to the effects of the proposed development</p> <p>OR</p> <p>The landscape receptor is of community value and is considered to have high susceptibility to the effects of the proposed development</p>
Low	<p>The landscape receptor is of local authority value and is considered to have low susceptibility to the effects of the proposed development</p> <p>OR</p> <p>The landscape receptor is of community value and is considered to have medium susceptibility to the effects of the proposed development</p> <p>OR</p> <p>The landscape receptor is of community value and is considered to have low susceptibility to the effects of the proposed development</p>

Magnitude of Landscape Change

The magnitude of landscape change is established by assessing the size or scale of change, the geographical extent of the area influenced and the duration and potential reversibility of the change.

Size and Scale of Change

The size and/or scale of change in the landscape takes into consideration the following factors:

- the loss or addition of landscape elements; and/or
- the degree to which aesthetic/perceptual aspects are altered; and
- whether this is likely to change the key characteristics of the landscape.

The criteria used to assess the size and scale of landscape change are based upon the amount of change that will occur as a result of the proposed development, as described in Table 5 below.

Table 5: Size/Scale of Change

Category	Description
Large level of landscape change	<p>There would be a large level of change in landscape character, and especially to the key characteristics if, for example, the proposed development:</p> <ul style="list-style-type: none"> • becomes a dominant feature in the landscape, changing the balance of landscape characteristics; and/or • would dominate important visual connections with other landscape types, where this is a key characteristic of the area.

Category	Description
Medium level of landscape change	There would be a medium level of change in landscape character, and especially to the key characteristics if, for example: <ul style="list-style-type: none"> the proposed development would be more prominent but would not change the overall balance or composition of the landscape; and/or key visual connections to other landscape types may be interrupted intermittently by the proposed development, but these connections would not be dominated by them.
Small level of landscape change	There would be a small level of change in landscape character, and especially to the key characteristics if, for example: <ul style="list-style-type: none"> there would be no introduction of new elements into the landscape and the proposed development would not significantly change the composition/balance of the landscape.
Negligible level of landscape change/ No change	There would be a negligible level of change in landscape character, and especially to the key characteristics if, for example, the proposed development would be a small element and/or would be a considerable distance from the landscape receptor/ the proposed development will cause no change to the landscape.

Geographical Extent of Change

The geographical extent of landscape change is assessed by determining the area over which the changes will influence the landscape, as set out in Table 6. For example, this could be at the site level, in the immediate setting of the site, or over some or all of the landscape character types or areas affected.

Table 6: Geographical Extent

Category	Description
Large extent of landscape change	The change will affect all or the majority of the landscape receptor under consideration.
Medium extent of landscape change	The change will affect approximately half of the landscape receptor under consideration.
Small extent of landscape change	The change will affect a small extent of the landscape receptor under consideration.
Negligible extent of landscape change	The change will affect only a limited or negligible extent of the landscape receptor under consideration.

Duration and Reversibility of Change

The duration of the landscape change is categorised in Table 7 below, which considers whether the change will be permanent and irreversible or temporary and reversible. The levels of duration are based on the EPA Draft Guidelines on the information to be contained in Environmental Impact Assessment Reports (2017).

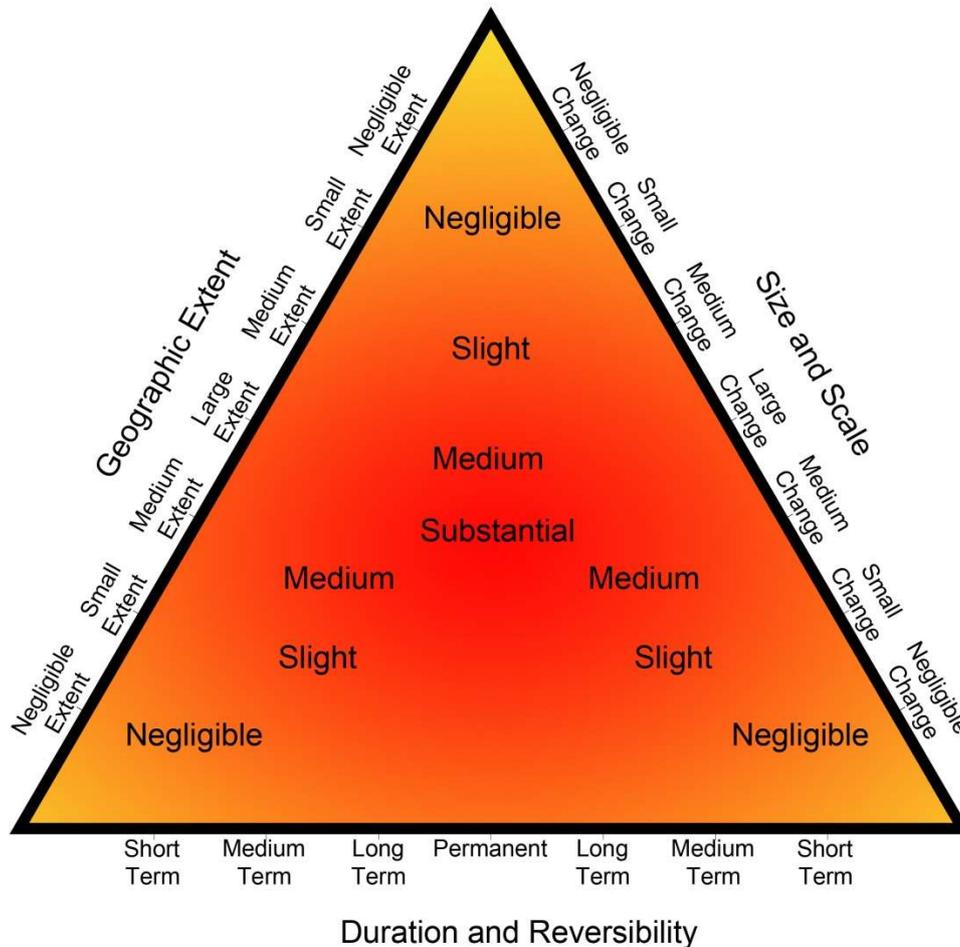
Table 7: Duration and Reversibility

Category	Description
Permanent/ Irreversible	Change that will last for over 60 years and is deemed permanent or irreversible.
Long-term reversible	Change that will last between 15 and 60 years and is potentially, or theoretically reversible.
Medium-term reversible	Change that will last between 7 and 15 years and is wholly or partially reversible.
Temporary/ Short-term reversible	Change that will last from 0 to 7 years and is reversible - includes construction effects.

Deciding on Overall Magnitude of Landscape Change

The relationships between the three factors that contribute to assessment of the magnitude of landscape effects are illustrated graphically, as a guide, in Figure 2 below. Various combinations are possible, and the overall magnitude of each effect is determined using professional judgement rather than by formulaic application of the relationships in the diagram.

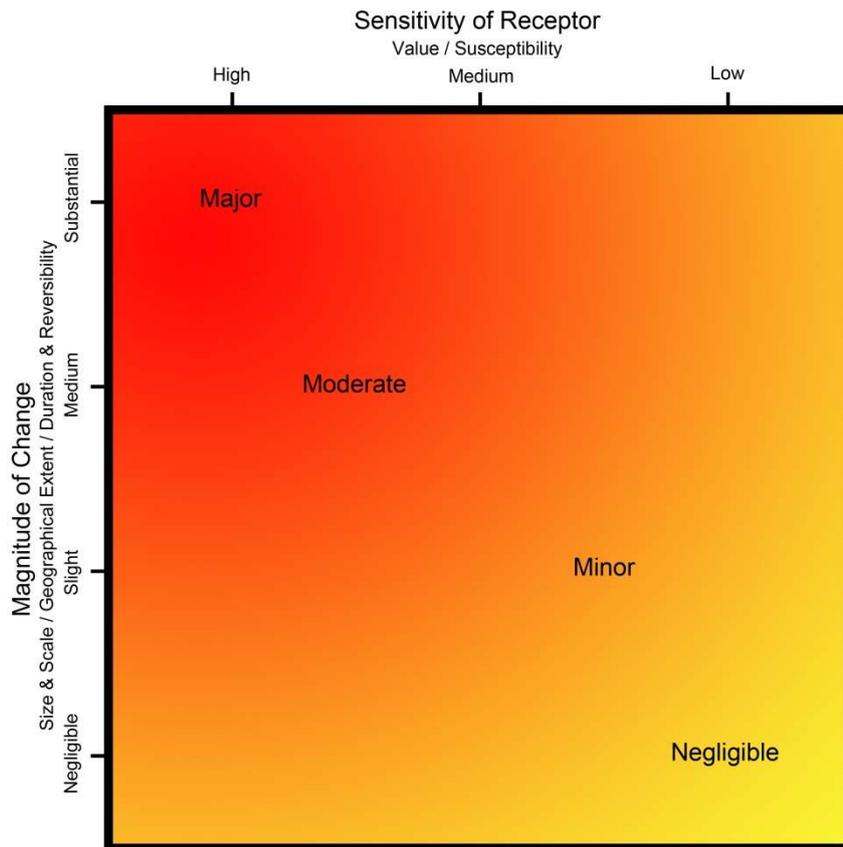
Figure 2: Determining the Magnitude of Landscape Change



Assessment of Landscape Effects and Significance

The assessment of landscape effects, and whether these are significant or not significant, is defined in terms of the relationship between the sensitivity of the landscape receptors and the magnitude of the change. The diagram below (Figure 3) summarises the nature of the relationship but it is not formulaic. Judgements are made about each landscape effect using this diagram as a guide.

Figure 3: Assessment of Landscape Effects and Overall Significance



Effects that fall in the red (darker) section of the diagram, that is those which are considered to be major and major/moderate effects by virtue of the more sensitive receptors and the greater magnitude of effects, are generally considered to be the **significant landscape effects**. Those effects falling outside the major or major/moderate categories are generally considered to be not significant. However, it should be noted that GLVIA3 states ‘there are no hard and fast rules about what effects should be deemed significant’ and in some cases professional judgement may determine that a moderate effect is significant. Moderate effects are considered individually on a case by case basis, to determine whether each effect is considered to be significant or not significant. In determining whether moderate effects are or are not significant, particular attention is given to the constituent judgements leading to the assessment of a moderate effect and particularly to value, susceptibility and size/scale of effect, and in addition whether the effect is found across a number of receptors or in a pattern that intensifies the overall impact.

Visual Effects

Visual effects are the effects of change and development on the views available to people and their visual amenity. Visual receptors are the people whose views may be affected by the proposed development. They may include:

- Communities within settlements (i.e. towns and villages);
- Residents of individual properties and clusters of properties outside settlements;
- People using nationally designated or regionally promoted footpaths and cycle routes;
- Visitors at publicly accessible sites including, for example, gardens and designed landscapes, historic sites, and other visitor attractions or outdoor recreational facilities where the landscape or seascape is an important part of the experience;
- Users of outdoor sport and recreation facilities;
- Visitors staying at caravan parks or camp sites;
- Road users on recognised scenic or promoted tourist routes;
- Travellers using other roads who may pass through the study area because they are visiting, living or working there;
- Rail passengers;
- People at their place of work.

Judging visual effects requires a methodical assessment of the sensitivity of the visual receptors to the proposed development and the magnitude of effect which would be experienced by each receptor.

Viewpoints are chosen for a variety of reasons but most commonly because they represent views experienced by relevant groups of people although they may also include specific promoted or otherwise important viewpoints.

Visual Sensitivity

Sensitivity of visual receptors is assessed by combining an assessment of the susceptibility of visual receptors to the type of change which is proposed with the value attached to the views. (GLVIA3, paragraph 6.30).

Value Attached to Views

Different levels of value are attached to the views experienced by particular groups of people at particular viewpoints. Assessment of value takes account of a number of factors, including:

- Recognition of the view through some form of planning designation or by its association with particular heritage assets; and
- The popularity of the viewpoint, in part denoted by its appearance in guidebooks, literature or art, or on tourist maps, by information from stakeholders and by the evidence of use including facilities provided for its enjoyment (seating, signage, parking places, etc.); and

- Other evidence of the value attached to views by people including consultation with local planning authorities, some of whom have carried out assessments of valued views, and professional assessment of the quality of views.

The assessment of the value of views is summarised in Table 8 below. These criteria are provided for guidance only.

Table 8: Examples of Factors Considered in assessing the Value Attached to Views

Value	Criteria
High	<p>Views from nationally (and in some cases internationally) known viewpoints, which:</p> <ul style="list-style-type: none"> • have some form of planning designation; or • are associated with internationally or nationally designated landscapes or important heritage assets; or • are promoted in sources such as maps and tourist literature; or • are linked with important and popular visitor attractions where the view forms a recognised part of the visitor experience; or • have important cultural associations. <p>Also, may include views judged by assessors to be of high value.</p>
Medium	<p>Views from viewpoints of some importance at regional or local levels, which:</p> <ul style="list-style-type: none"> • have some form of local planning designation associated with locally designated landscapes or areas of equivalent landscape quality; or • are promoted in local sources; or • are linked with locally important and popular visitor attractions where the view forms a recognised part of the visitor experience; or • have important local cultural associations. <p>Also, may include views judged by the assessors to be of medium value.</p>
Low	<p>Views from viewpoints which, although they may have value to local people:</p> <ul style="list-style-type: none"> • have no formal planning status; or • are not associated with designated or otherwise high-quality landscapes; or • are not linked with popular visitor attractions; or • have no known cultural associations. <p>Also, may include views judged by the assessors to be of low value.</p>

Where judgements are made about the value attached to views experienced by residential receptors, the following considerations also apply:

- Views in a rural or designed context (e.g. an avenue of trees or designed view from a parkland), especially if associated with landscapes of national or local authority value, where residential receptors are positioned to take advantage of the views, will generally be considered to be of high value;

- Views in a semi-rural or general townscape context, and/or where locations of residential receptors are not positioned to take full advantage of views, will generally be considered of medium value; and
- Views in an urban/industrial context, and/or where locations of residential receptors are not positioned to take advantage of views, will generally be considered of low value.

Susceptibility of Visual Receptors to Change

The susceptibility of different types of people to changes in views is mainly a function of:

- The occupation or activity of the viewer at a given viewpoint; and
- The extent to which the viewer's attention or interest be focussed on a particular view and the visual amenity experienced at a given view.

The susceptibility of different groups of viewers is assessed with reference to the guidance in Table 9 below. However, as noted in GLVIA3 *“this division is not black and white and, in reality, there will be a gradation in susceptibility to change”*. Therefore, the susceptibility of each group of people affected is considered for each project and assessments are included in the relevant text in the report.

Table 9: Visual Receptor Susceptibility to Change

Susceptibility	Criteria
High	Residents; People engaged in outdoor recreation where their attention is likely to be focused on the landscape and on particular views; Visitors to heritage assets or other attractions where views of the surroundings are an important part of the experience; Communities where views contribute to the landscape setting enjoyed by the residents.
Medium	Travellers on scenic routes where the attention of drivers and passengers is likely to be focused on the landscape and on particular views. People engaged in outdoor sport or recreation, which may involve appreciation of views e.g. users of golf courses.
Low	People engaged in outdoor sport or recreation, which does not involve appreciation of views; People at their place of work whose attention is focused on their work; where the setting is not important to quality of working life; Travellers, where the view is incidental to the journey.

Defining Sensitivity

As noted above, the sensitivity of visual receptors is defined in terms of the relationship between the value of views and the susceptibility of the different receptors to the proposed change, as indicated in Figure 4 and Table 10. These summarise the general nature of the relationship but the combination of the two factors is not formulaic. Table 10 provides examples of common combinations but is not comprehensive and other combinations may be judged appropriate. Professional judgement is applied on a case by case basis in determining the sensitivity of individual receptors with the diagram and table only serving as a guide.

Where, taking into account the component judgements about the value and susceptibility of the visual receptor, sensitivity is judged to lie between levels, an intermediate assessment of high/medium or

medium/low may be adopted. In a few limited cases a category of less than low (very low) may be used where the visual receptor is of low value and susceptibility is particularly low.

Figure 4: Levels of Sensitivity Defined by Value and Susceptibility of Visual Receptor Groups

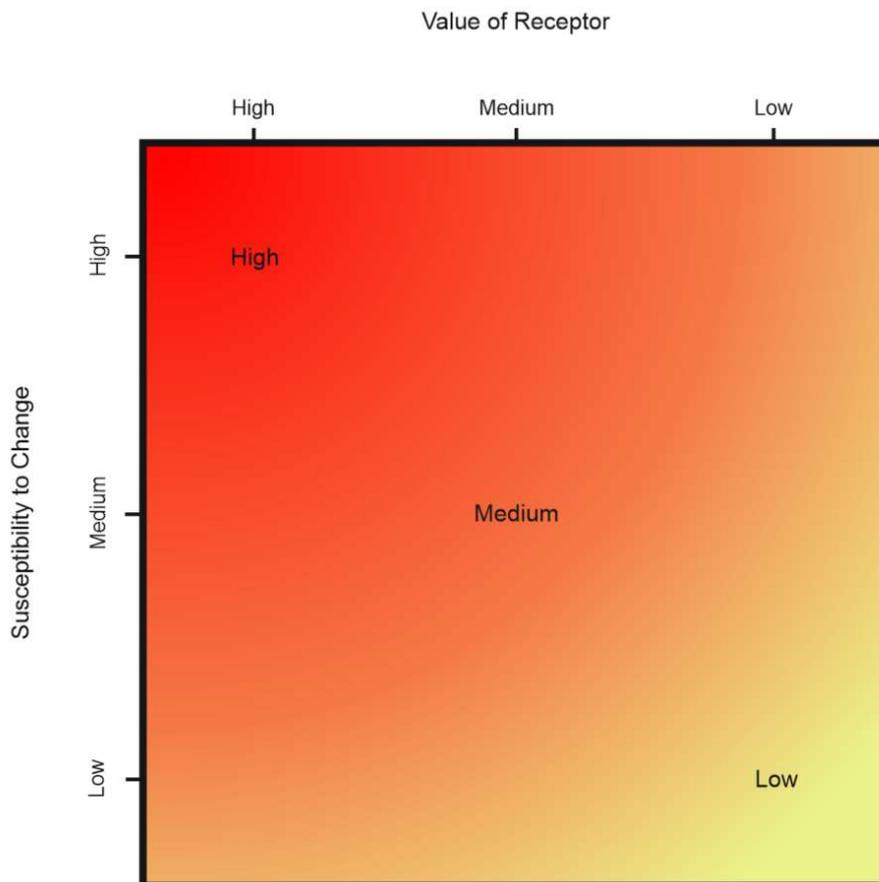


Table 10: Example Levels of Sensitivity defined by Value and Susceptibility of Visual Receptors

Sensitivity	Criteria
High	The visual receptor group is highly susceptible to changes in views and visual amenity and relevant views are of high value OR The visual receptor group has a medium level of susceptibility to changes in views and visual amenity and relevant views are of high value OR The visual receptor group is highly susceptible to changes in views and visual amenity and relevant views are of value at the medium level.

Sensitivity	Criteria
Medium	<p>The visual receptor group is highly susceptible to changes in views and visual amenity and relevant views are of value at the low level</p> <p>OR</p> <p>The visual receptor group has a medium level of susceptibility to changes in views and visual amenity and relevant views are of value at the medium level</p> <p>OR</p> <p>The visual receptor group has a low level of susceptibility to changes in views and visual amenity and relevant views are of value at the high level.</p>
Low	<p>The visual receptor group has a medium level of susceptibility to changes in views and visual amenity and relevant views are of value at the low level</p> <p>OR</p> <p>The visual receptor group has a low level of susceptibility to changes in views and visual amenity and relevant views are of value at the medium level</p> <p>OR</p> <p>The visual receptor group has a low level of susceptibility to changes in views and visual amenity and relevant views are of value at the low level.</p>

Magnitude of Visual Change

The magnitude of visual change is established by assessing the size or scale of change, the geographical extent of the area influenced and the duration and potential reversibility of the change. Representative viewpoints are used as 'sample' points to assess the typical change experienced by different groups of visual receptors at different distances and directions from the proposed development.

Size and Scale of Change

The criteria used to assess the size/scale of visual change are as follows:

- the scale of the change in the view with respect to the loss or addition of features in the view, changes in its composition, including the proportion of the view occupied by the proposed development and distance of view;
- the degree of contrast or integration of any new features or changes in the landscape with the existing or remaining landscape elements and characteristics in terms of factors such as form, scale and mass, line, height, colour and texture; and
- the nature of the view of the proposed development, for example whether views will be full, partial or glimpses or sequential views while passing through the landscape.

The above criteria are summarised in the Table 11 below.

Table 11: Size/Scale of Change

Category	Criteria
Large visual change	The proposed development will cause a complete or large change in the view, resulting from the loss of important features in or the addition of important new ones, to the extent that this will substantially alter the composition of the view and the visual amenity it offers.
Medium visual change	The proposed development will cause a clearly noticeable change in the view, resulting from the loss of features or the addition of new ones, to the extent that this will alter to a moderate degree the composition of the view and the visual amenity it offers. Views may be partial/intermittent.
Small visual change	The proposed development will cause a perceptible change in the view, resulting from the loss of features or the addition of new ones, to the extent that this will partially alter the composition of the view and the visual amenity it offers. Views may be partial only.
Negligible visual change	The proposed development will cause a barely perceptible change in the view, resulting from the loss of features or the addition of new ones, to the extent that this will barely alter the composition of the view and the visual amenity it offers. Views may be glimpsed only.
No change	The proposed development will cause no change to the view.

Geographical Extent of Change

The geographical extent of the visual change identified at representative viewpoints is assessed by reference to a combination of the Zone of Theoretical Visibility (ZTV), where this has been prepared, and field work. The way that geographical extent is assessed varies with circumstances.

Most commonly a number of representative viewpoints are used as 'sample' points to assess the typical change experienced by a particular group of visual receptors in locations at different distances and directions from the proposed development. In such cases the geographical extent of the visual change is judged for each group of receptors (for example, people using a particular route or public amenity) drawing on the relevant viewpoint assessments, plus information about the approximate number and distribution of that particular group of people in the Study Area. For example, the geographical extent would be small if the change is experienced at only one or two locations and/or by a smaller number of viewers. Community views may, for example, be experienced from a small number of dwellings, or affect numerous properties in the community, or several different communities. Similarly, changes to a view from a public footpath may be visible from a single isolated viewpoint (small geographical extent), or over a prolonged stretch of the route (large geographical extent).

In the case of individual (rather than representative) viewpoints in a specific location, the following factors (as noted in GLVIA3), are considered in judging geographical extent:

- the angle of view in relation to the main activity of the receptor;
- the distance of the viewpoint from the proposed development; and
- the extent of the area over which changes would be visible.

For example, from an elevated area of Open Access Land the proposed development may be widely visible from much or all of the accessible area, be close to it and so occupy a wide angle of the view, suggesting large geographical extent. Alternatively, the proposed development may be visible from only a small proportion of the area, be quite distant from it and so occupy a small proportion of the view, suggesting small geographical extent.

Table 12 describes the most common categories of geographical extent based on these two approaches.

Table 12: Geographical Extent of Change

Category	Description
Large extent of visual change	Either: The proposed development is seen by the group of receptors in many locations across the Study Area or from the majority, or a large proportion, of a linear route and/or by large numbers of viewers; Or: The proposed development is visible from much or all of a specific site is close to it and so occupies a wide angle of the view.
Medium extent of visual change	Either: The proposed development is seen by the group of receptors in several locations across the Study Area or from a moderate proportion of a linear route and/or by moderate numbers of viewers; Or: The proposed development is visible from a moderate part of a specific site, is at a moderate distance from it and so occupies a moderate angle of the view.
Small extent of visual change	Either: The proposed development is seen by the group of receptors at a small number of locations across the Study Area or from limited sections of a linear route and/or by a small numbers of viewers; Or: The proposed development is visible from a small part of a specific site, is at some distance from it and so occupies a small angle of the view.
Negligible extent of visual change	Either: The proposed development is not visible in the Study Area or is seen by the group of receptors at only one or two locations or from a very short length of a linear route and/or by a very small number of viewers; OR: The proposed development is visible from only a very small part of a site, is at a considerable distance from it and so occupies a very small angle of the view.

Duration and Reversibility of Change

The duration of the visual change at viewpoints is categorised in Table 13 below, which considers whether views will be permanent and irreversible or temporary and reversible. The levels of duration are based on the EPA Draft Guidelines on the information to be contained in Environmental Impact Assessment Reports (2017).

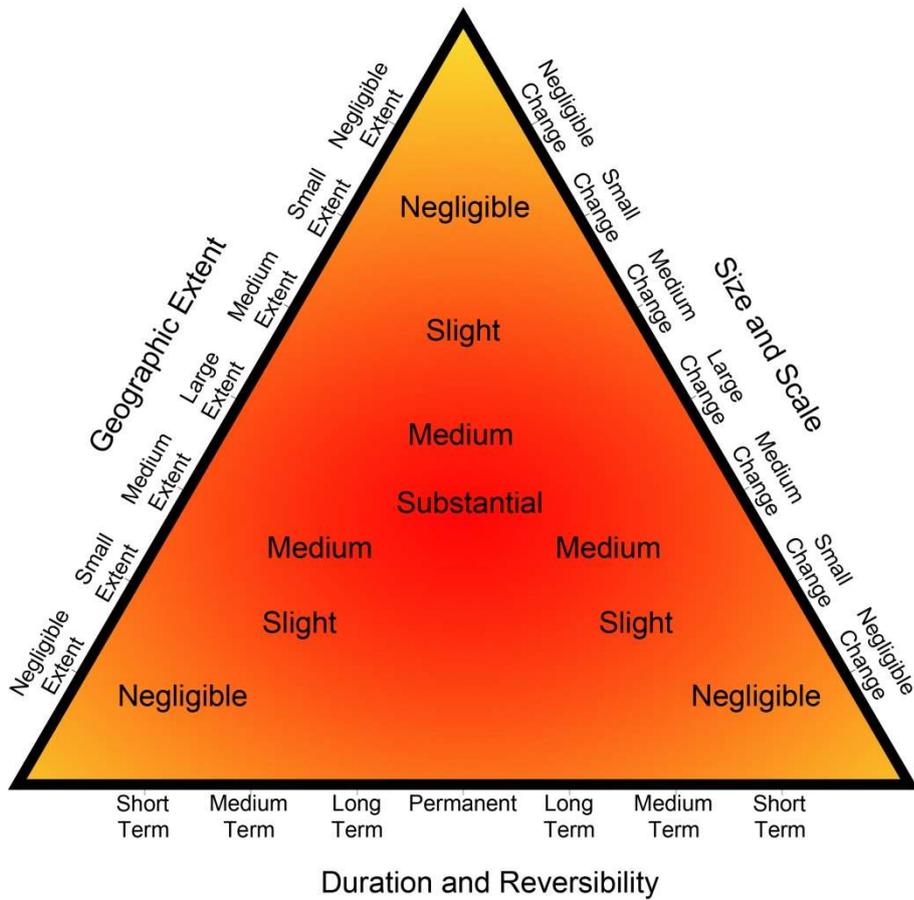
Table 13: Duration and Reversibility

Category	Description
Permanent/ Irreversible	Change that will last for over 60 years and is deemed permanent or irreversible.
Long-term reversible	Change that will last between 15 and 60 years and is potentially, or theoretically reversible.
Medium-term reversible	Change that will last between 7 and 15 years and is wholly or partially reversible.
Temporary/ Short-term reversible	Change that will last from 0 to 7 years and is reversible - includes construction effects.

Deciding on Overall Magnitude of Visual Change

The relationships between the three factors that contribute to assessment of the magnitude of visual effects are illustrated graphically, as a guide, in Figure 5 below. Various combinations are possible, and the overall magnitude of each effect is made using professional judgement rather than by formulaic application of the relationships in the diagram.

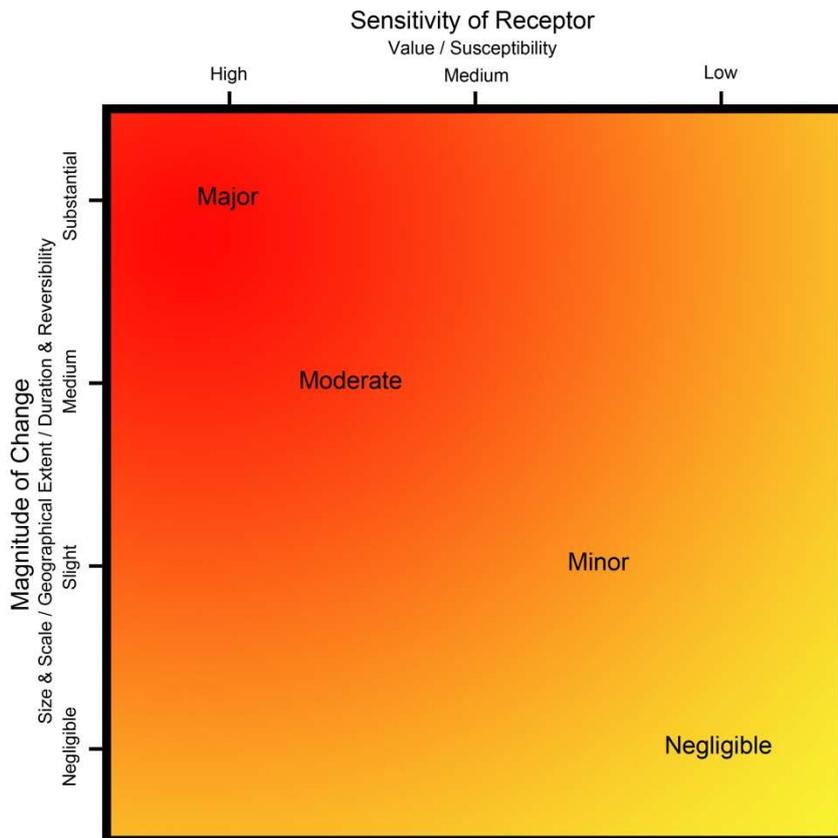
Figure 5: Determining the Magnitude of Visual Change



Assessment of Visual Effects and Significance

The assessment of visual effects, and whether these are significant or not significant, is defined in terms of the relationship between the sensitivity of the visual receptors and the magnitude of the change. The diagram below (Figure 6) summarises the nature of the relationship but it is not formulaic and only indicates broad levels of effect. Judgements are made about each visual effect using this diagram as a guide.

Figure 6: Assessment of Visual Effects and Overall Significance



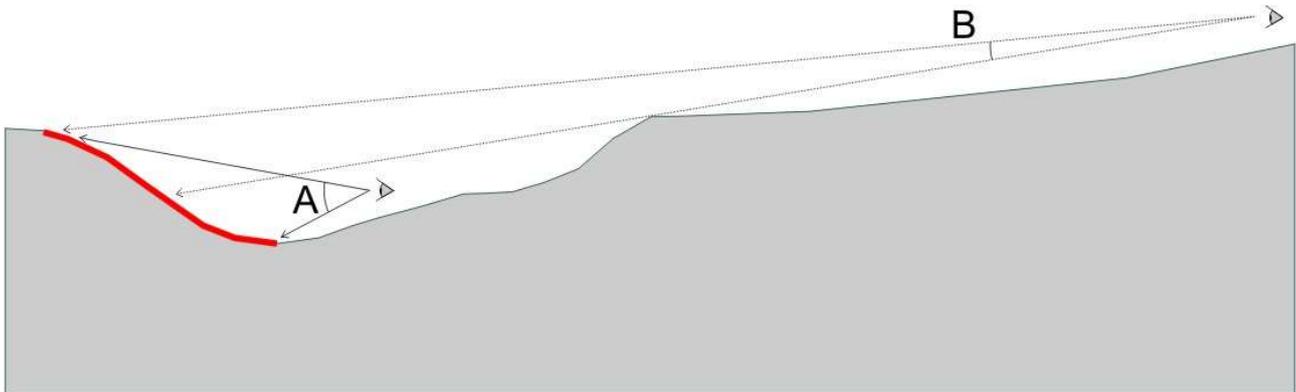
Effects that fall in the red (darker) section of the diagram, that is those which are considered to be major and major/moderate effects by virtue of the more sensitive receptors and the greater magnitude of effects, are generally considered to be the **significant landscape effects**. Those effects falling outside the major or major/moderate categories are generally considered to be not significant. However, it should be noted that GLVIA3 states ‘there are no hard and fast rules about what effects should be deemed significant’ and in some cases professional judgement may determine that a moderate effect is significant. Moderate effects are considered individually on a case by case basis, to determine whether each effect is considered to be significant or not significant. In determining whether moderate effects are or are not significant, particular attention is given to the constituent judgements leading to the assessment of a moderate effect and particularly to value, susceptibility and size/scale of effect, and in addition whether the effect is found across a number of receptors or in a pattern that intensifies the overall impact.

Appendix 13-B – Zone of Theoretical Visibility (ZTV) Methodology

A Zone of Theoretical Visibility (ZTV) Study was conducted for the proposed development to help identify areas sensitive to visual impacts. This study used the measurement of the vertical subtended angle for its methodology. This method is explained below and illustrated by Figure A, below.

When a Target Area (red) is observed from a Viewpoint (A or B) its apparent height can be measured in the form of degrees, to give a Subtended Vertical Angle.

Figure A:



The use of the Subtended Vertical Angle in formulating a ZTV has the benefit of automatically reducing values to reflect the distance from the Target Area, and partial screening by intervening landforms. Generally, the further the viewpoint is from the Target Area the smaller the Subtended Vertical Angle, reflecting the effect of distance on visual impacts.

Thus, in the example section above Viewpoint A experiences a higher subtended angle due to proximity to the red target area. Viewpoint B has a lower subtended angle due to greater distance from the target area and partial screening by intervening landform.

If the Subtended Vertical Angle is measured from a series of grid points for a particular Target Area, the resultant data can then be used to generate contours. Each contour level representing a certain vertical angle, and thus potential level of visibility.

The subtended vertical angle method of calculating ZTVs using LSS digital terrain modelling software has been proven by field investigation on numerous sites to be an accurate method of predicting areas of potential visibility for on-site investigation.

However, the computer generated ZTV study is undertaken using a bare earth landform to give the worst-case scenario. In reality any built structures (settlements, walls etc) or areas of vegetation (woodlands, scrub and hedgerows) will reduce the actual visibility of the target area. Therefore, it is necessary to carry out fieldwork to validate the results of the ZTV.

FIGURES

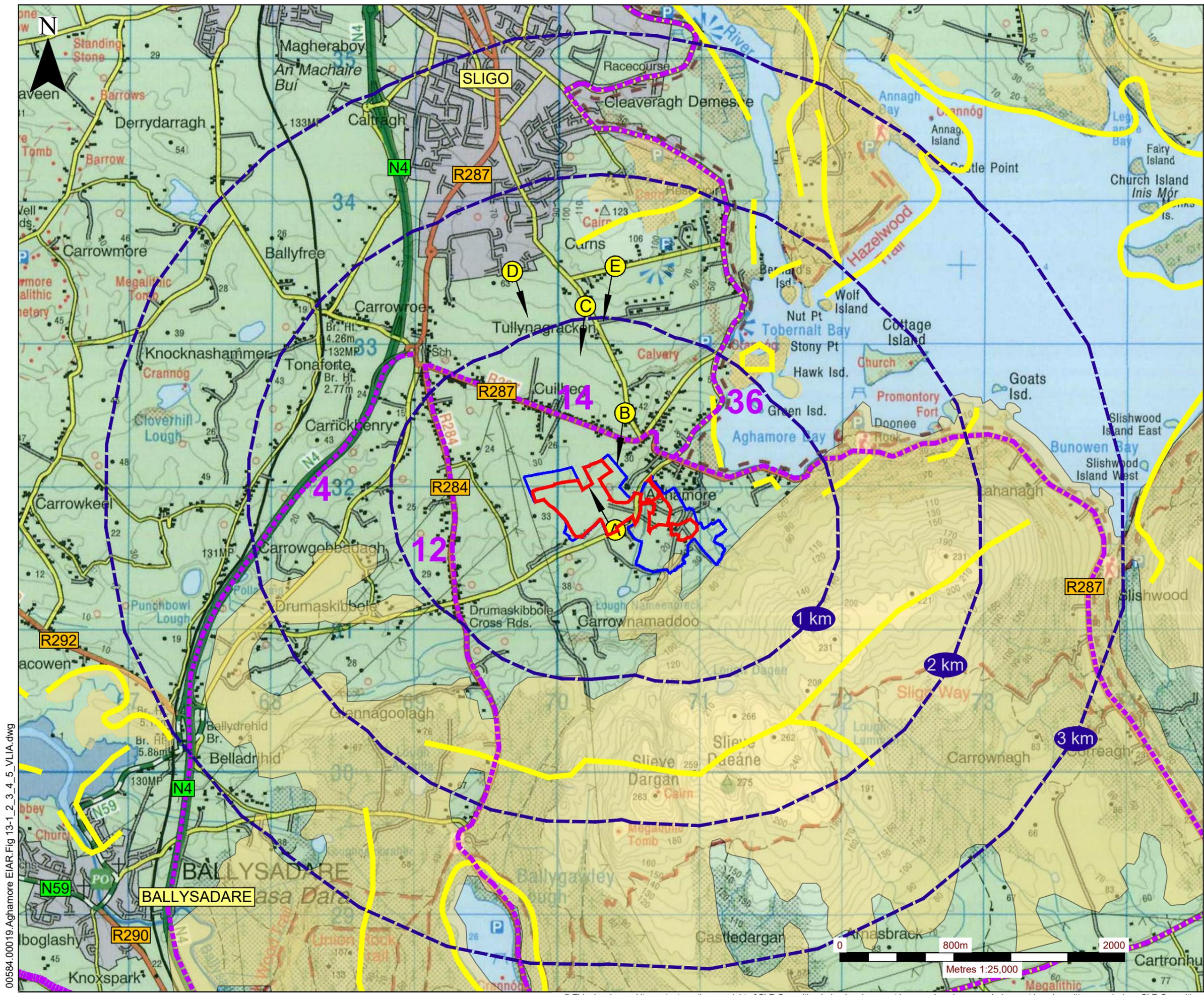
Figure 13-1
Landscape Baseline and Viewpoint Locations

Figure 13-2
Zone of Theoretical Visibility (ZTV) Map

Figure 13-3
Viewpoints A & B

Figure 13-4
Viewpoints C & D

Figure 13-5
Viewpoints E & F



NOTES
 1. EXTRACT FROM 1:50,000 O.S DISCOVERY MAP NO. 25
 2. ORDNANCE SURVEY IRELAND LICENCE NO. **CYAL50167032** (c) ORDNANCE SURVEY & GOVERNMENT OF IRELAND.

- LEGEND**
-  LAND INTEREST BOUNDARY
 -  PLANNING APPLICATION AREA
 -  APPROXIMATE DISTANCE FROM CENTRE OF APPLICATION AREA
 -  VIEWPOINT LOCATIONS

- LANDSCAPE CHARACTERISATION MAP - SLIGO COUNTY DEVELOPMENT PLAN**
-  NORMAL RURAL LANDSCAPES
 -  SENSITIVE RURAL LANDSCAPES
 -  VISUALLY VULNERABLE AREAS
 -  SCENIC ROUTES

SLR SLR CONSULTING IRELAND
 7 DUNDRUM BUSINESS PARK
 WINDY ARBOUR
 DUBLIN 14
 T: +353-1-2964667
 F: +353-1-2964676
 www.slrconsulting.com

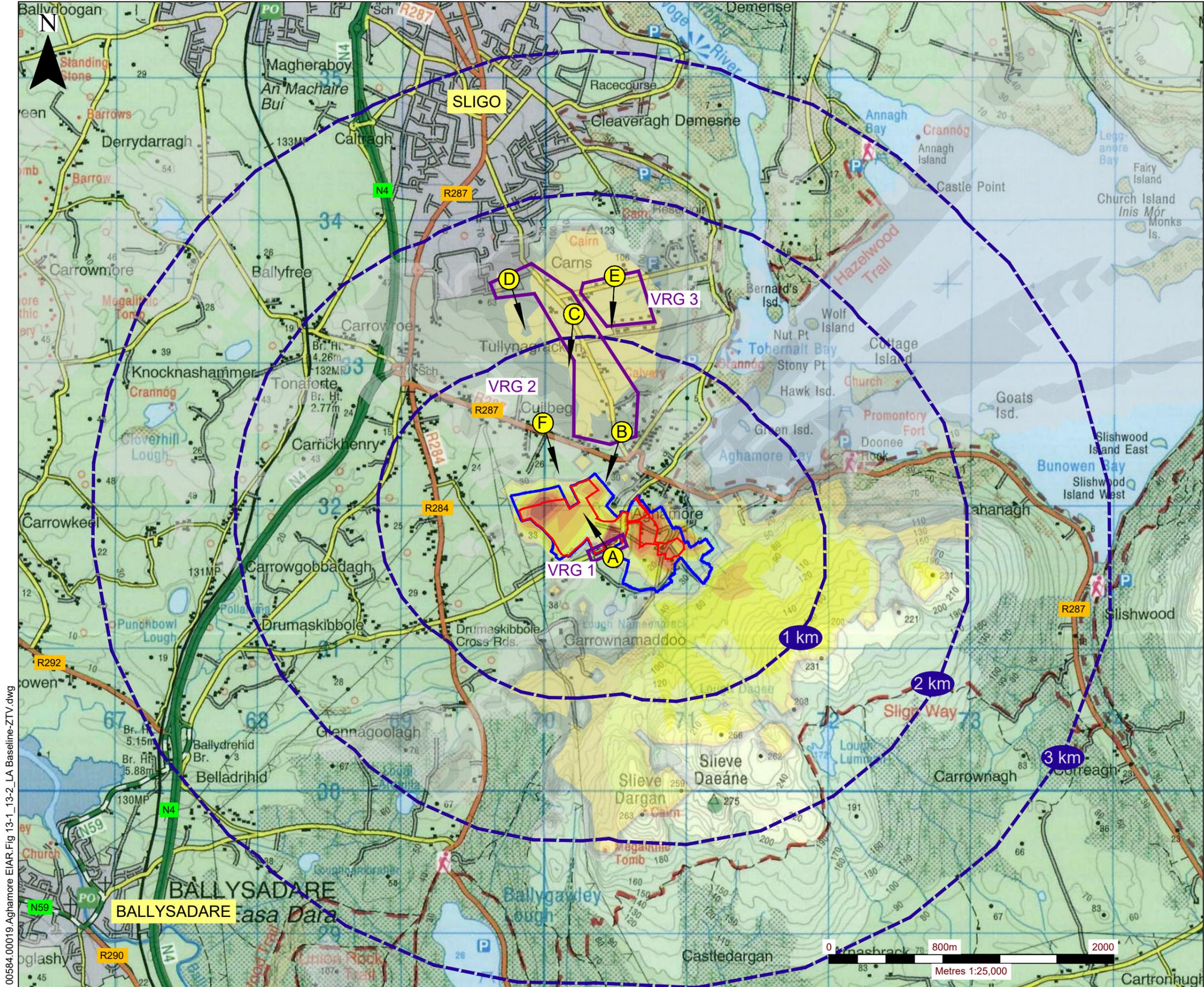
LAGAN MATERIALS LTD.
 LIMESTONE QUARRY AT
 AGHAMORE NEAR, AGHAMORE FAR AND
 CARROWNAMADDOO, CO. SLIGO

**LANDSCAPE BASELINE
 AND VIEWPOINT LOCATIONS**

FIGURE 13-1

Scale 1:25,000 @ A3 Date MAY 2021

00584_00019_Aghamore EIAR: Fig 13-1_2_3_4_5_VLIA.dwg



NOTES
 1. EXTRACT FROM 1:50,000 O.S DISCOVERY MAP NO. 25
 2. ORDNANCE SURVEY IRELAND LICENCE NO. CYAL50167032 (C) ORDNANCE SURVEY & GOVERNMENT OF IRELAND

- LEGEND**
- LAND INTEREST BOUNDARY
 - PLANNING APPLICATION AREA
 - DISTANCE FROM THE APPLICATION AREA BOUNDARY
 - VIEWPOINT LOCATIONS
 - VISUAL RECEPTOR GROUPS (VRG) (I.E. RECEPTORS WITH SIMILAR VIEWS OF THE APPLICATION AREA)

- VERTICAL SUBTENDED ANGLES VISIBLE:**
- SUBTENDED VERTICAL ANGLE GREATER THAN 25.6 DEGREES
 - SUBTENDED VERTICAL ANGLE 12.8 TO 25.6 DEGREES
 - SUBTENDED VERTICAL ANGLE 6.4 TO 12.8 DEGREES
 - SUBTENDED VERTICAL ANGLE 3.2 TO 6.4 DEGREES
 - SUBTENDED VERTICAL ANGLE 1.6 TO 3.2 DEGREES
 - SUBTENDED VERTICAL ANGLE 0.8 TO 1.6 DEGREES
 - SUBTENDED VERTICAL ANGLE 0.4 TO 0.8 DEGREES
 - SUBTENDED VERTICAL ANGLE 0.2 TO 0.4 DEGREES
 - SUBTENDED VERTICAL ANGLE 0.1 TO 0.2 DEGREES
 - SUBTENDED VERTICAL ANGLE LESS THAN 0.1 DEGREES (= NO THEORETICAL VISIBILITY)
- NOTE:** Vegetation cover and built structures are not taken into account as part of the ZTV calculation process. Areas in grey (i.e. less than 0.4 degrees) tend to be screened by hedgerows and vegetation, if present. Please refer to Appendix 13-B of the EIAR for the ZTV methodology.

SLR CONSULTING IRELAND
 7 DUNDUM BUSINESS PARK
 WINDY ARBOUR
 DUBLIN 14
 T: +353-1-2964667
 F: +353-1-2964676
 www.slrconsulting.com

LAGAN MATERIALS LTD.
LIMESTONE QUARRY AT
AGHAMORE AND
CARROWNAMADDOO, CO. SLIGO
ZONE OF THEORETICAL
VISIBILITY (ZTV) MAP

FIGURE 13-2

Scale: 1:25,000 @ A3
 Date: APRIL 2021

00584.00019_Aghamore EIAR: Fig 13-1_13-2_LA Baseline-ZTV.dwg



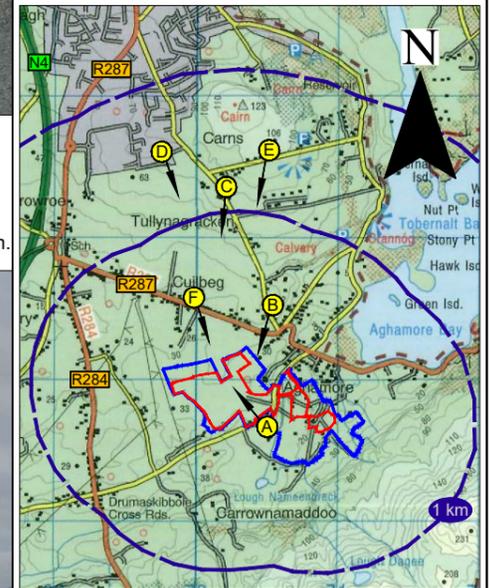
The existing quarry is located behind this local ridgeline

NOTES
 1. EXTRACT FROM 1:50,000 O.S DISCOVERY MAP NO. 25
 2. ORDNANCE SURVEY IRELAND LICENCE NO. **CYAL50167032** (c) ORDNANCE SURVEY & GOVERNMENT OF IRELAND.
 3. PHOTOS TAKEN 26TH NOVEMBER 2020.

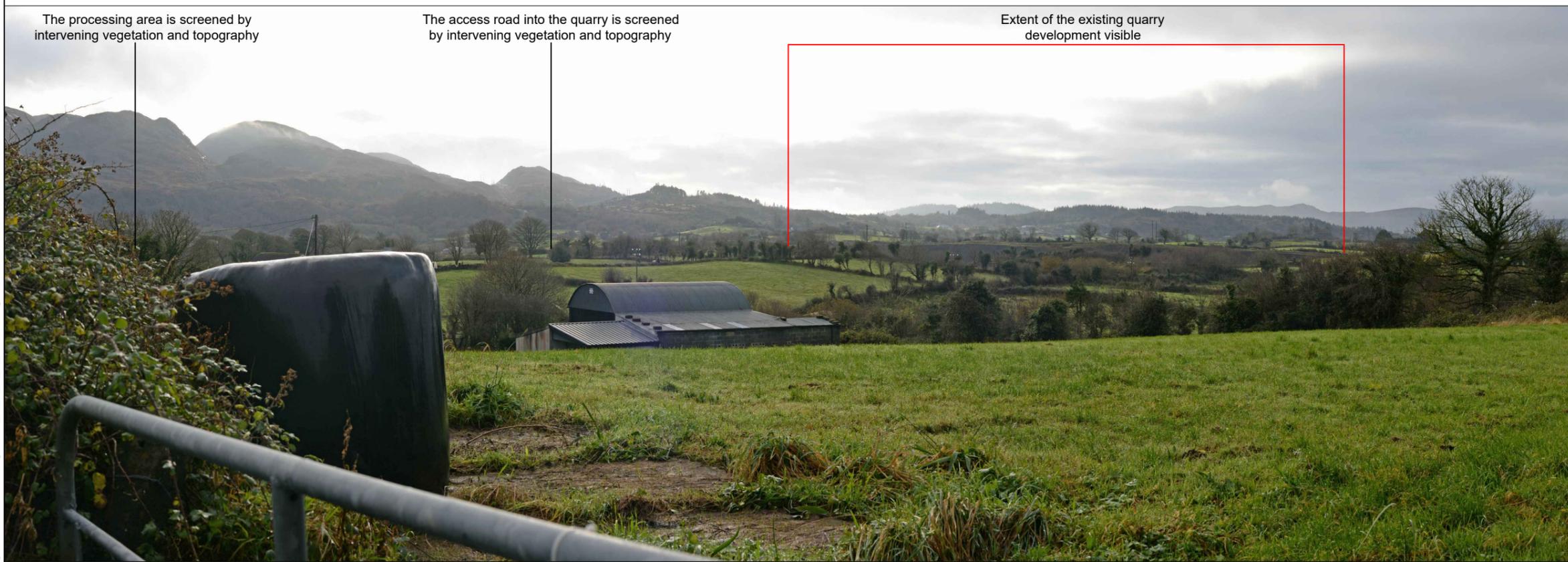
LEGEND

- LAND INTEREST BOUNDARY
- PLANNING APPLICATION AREA
- APPROXIMATE DISTANCE FROM APPLICATION AREA BOUNDARY
- VIEWPOINT LOCATIONS

VIEWPOINT LOCATION MAP (1:50,000 @ A3)



VIEWPOINT A: Local Road south west of the settlement of Aghamore.
 Grid Reference (ITM): **570419:831704** Approximate Elevation: **19m AOD** Distance from application area: **20m** Direction of View: **North west**
Description: Views into the neighbouring undulating pasture fields are available from a number of locations along this road, where the roadside hedgerow is kept low. Manmade elements, such as the road, walls, buildings & electricity lines are common in these views. The fence along the northern boundary of the existing quarry development is visible along the skyline. However, the quarry void/faces are fully screened by existing topography in all locations along this road. This will not change, due to the proposed deepening of the quarry. Some additional hedgerow/woodland planting is proposed to be carried out in the field visible in the above view. The processing area, which forms part of the application area, is also fully screened in views from this road, due to topography and dense vegetation.



The processing area is screened by intervening vegetation and topography

The access road into the quarry is screened by intervening vegetation and topography

Extent of the existing quarry development visible

SLR CONSULTING IRELAND
 7 DUNDRUM BUSINESS PARK
 WINDY ARBOUR
 DUBLIN 14
 T: +353-1-2964667
 F: +353-1-2964676
 www.slrconsulting.com

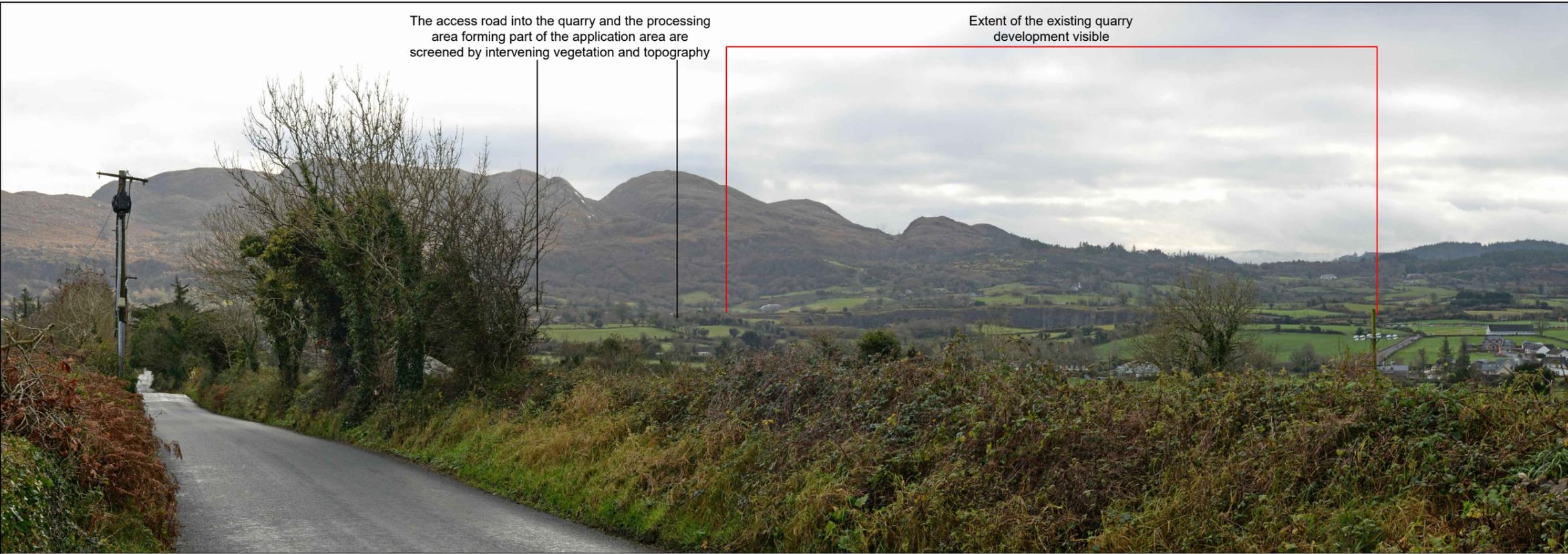
LAGAN MATERIALS LTD.
 ENVIRONMENTAL IMPACT ASSESSMENT REPORT
**LIMESTONE QUARRY AT
 AGHAMORE AND
 CARROWNAMADDOO, CO. SLIGO**
VIEWPOINTS A & B

FIGURE 13-3

Scale: N/A Date: APRIL 2021

VIEWPOINT B: Local road north west of the settlement of Aghamore.
 Grid Reference (ITM): **570460:832500** Approximate Elevation: **34m AOD** Distance from application area: **330m** Direction of View: **South west**
Description: Views from this section of the road are generally restricted by roadside vegetation. This view is taken over rolling farmland with mature hedgerow vegetation and mature trees against the backdrop of the mountain skyline associated with Slieve Dargan and Slieve Daeane. Part of the application area, featuring the existing quarry, is visible in the middle ground of the view, specifically the upper portion of the south western quarry face. The proposed works associated with the lowering of the quarry void will not be visible in this view. The processing area, which forms part of the application area, is screened by intervening vegetation and topography in views from this area.

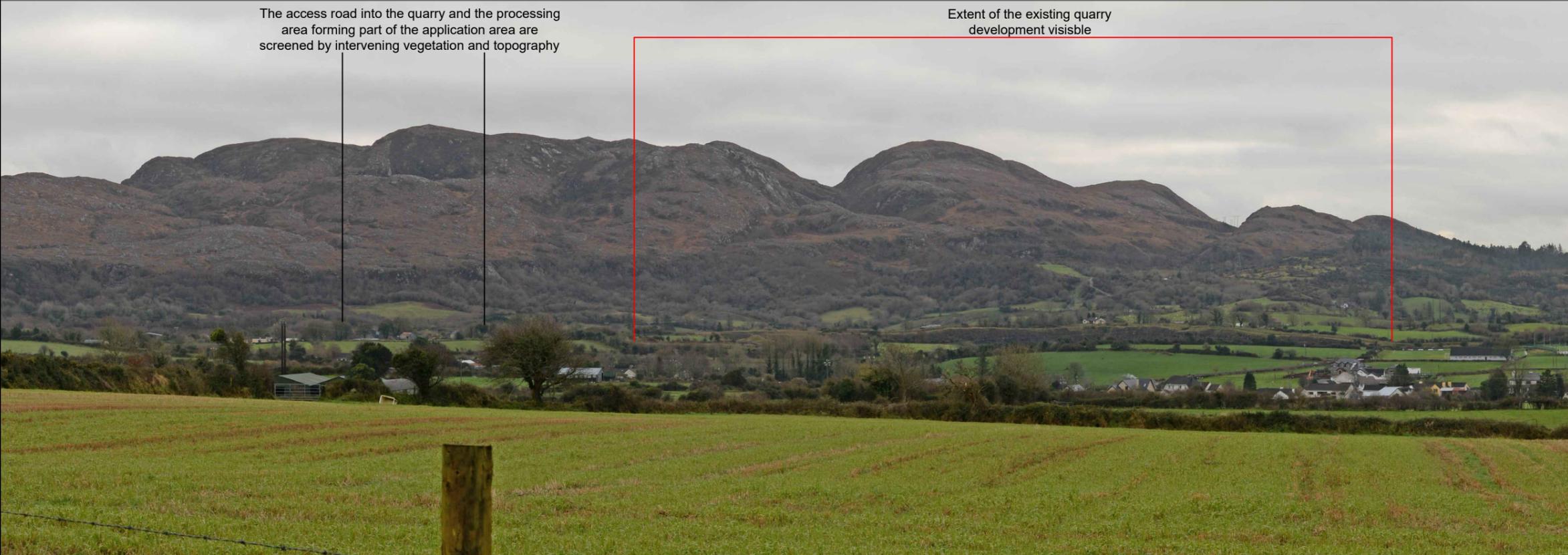
00584.00019_Aghamore EIAR.Fig 13-1_2_3_4_5_VLIA.dwg



VIEWPOINT C: Local Road in the townland of Tullynagracken.

Grid Reference (ITM): **570171:833269** Approximate Elevation: **76m AOD** Distance from application area: **1,090m** Direction of View: **South**

Description: Views from this section of the road are generally restricted by roadside vegetation, as can be seen in the above view. Where the roadside vegetation is low, panoramic views open up, looking over a wide expanse of rolling farmland, scattered with dwellings and with mature hedgerow vegetation and mature trees against the backdrop of the mountain skyline associated with Slieve Dargan and Slieve Daeane. Part of the application area, featuring the existing quarry, is visible in the middle ground of these views, specifically the upper portion of the south western quarry face. The proposed works associated with the lowering of the quarry void will not be visible in this view. The processing area, which forms part of the application area, is screened by intervening vegetation and topography in views from this area.



VIEWPOINT D: Southern Edge of residential area of Sligo Town.

Grid Reference (ITM): **569733:833548** Approximate Elevation: **72m AOD** Distance from application area: **1,420m** Direction of View: **South east**

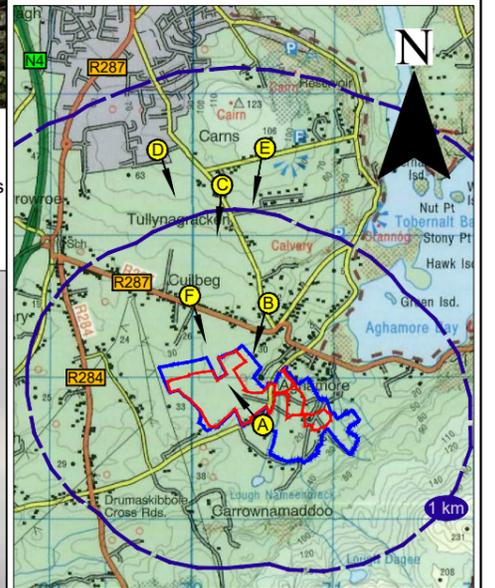
Description: There are a number of similar panoramic views available from the southern edge of the residential area of Sligo Town. The views are of a wide expanse of rolling farmland, scattered with dwellings and with mature hedgerow vegetation and mature trees against the backdrop of the mountain skyline associated with Slieve Dargan and Slieve Daeane. Part of the application area, featuring the existing quarry, is visible in the middle ground of these views, specifically the upper portion of the south western quarry face. The proposed works associated with the lowering of the quarry void will not be visible in this view. The processing area, which forms part of the application area, is screened by intervening vegetation and topography in views from this area.

NOTES
 1. EXTRACT FROM 1:50,000 O.S DISCOVERY MAP NO. 25
 2. ORDNANCE SURVEY IRELAND LICENCE NO. **CYAL50167032** (c) ORDNANCE SURVEY & GOVERNMENT OF IRELAND.
 3. PHOTOS TAKEN 26TH NOVEMBER 2020.

LEGEND

-  LAND INTEREST BOUNDARY
-  PLANNING APPLICATION AREA
-  APPROXIMATE DISTANCE FROM APPLICATION AREA BOUNDARY
-  VIEWPOINT LOCATIONS

VIEWPOINT LOCATION MAP (1:50,000 @ A3)



SLR CONSULTING IRELAND
 7 DUNDRUM BUSINESS PARK
 WINDY ARBOUR
 DUBLIN 14
 T: +353-1-2964667
 F: +353-1-2964676
 www.slrconsulting.com

LAGAN MATERIALS LTD.
 ENVIRONMENTAL IMPACT ASSESSMENT REPORT
 LIMESTONE QUARRY AT
 AGHAMORE AND
 CARROWNAMADDOO, CO. SLIGO
VIEWPOINTS C & D
FIGURE 13-4

Scale	N/A	Date	APRIL 2021
-------	-----	------	------------

00584.00019_Aghamore EIAR.Fig 13-1_2_3_4_5_VLIA.dwg



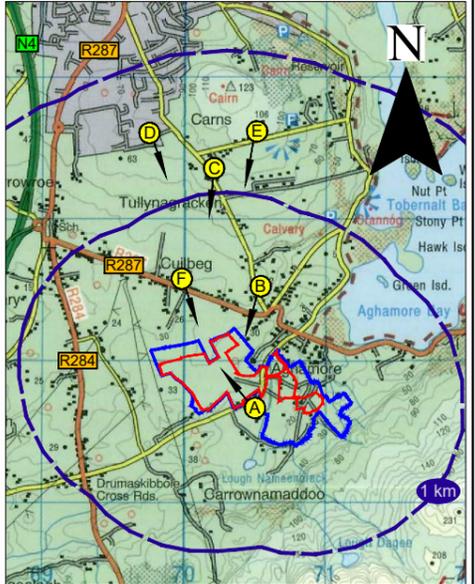
NOTES

1. EXTRACT FROM 1:50,000 O.S DISCOVERY MAP NO. 25
2. ORDNANCE SURVEY IRELAND LICENCE NO. **CYAL50167032** (c) ORDNANCE SURVEY & GOVERNMENT OF IRELAND.
3. PHOTOS TAKEN 26TH NOVEMBER 2020.

LEGEND

- LAND INTEREST BOUNDARY
- PLANNING APPLICATION AREA
- APPROXIMATE DISTANCE FROM APPLICATION AREA BOUNDARY
- VIEWPOINT LOCATIONS

VIEWPOINT LOCATION MAP (1:50,000 @ A3)



VIEWPOINT E: Local Road in the townland of Carns.
 Grid Reference (ITM): **570413:833579** Approximate Elevation: **99m AOD** Distance from application area: **1,360m** Direction of View: **South**
Description: There are open panoramic views from an approximately 400m long section of this road, the main focus being Lough Gill further to the east (to the left of what is shown in the above view). Views in a more southern/western direction look over a wide expanse of rolling farmland, scattered with dwellings and with mature hedgerow vegetation and mature trees against the backdrop of the mountain skyline associated with Slieve Dargan and Slieve Daeane. Two sections of the application area, featuring the existing quarry and part of the processing area, are visible in the middle ground of these views, specifically the upper portion of the south western quarry face. The proposed works associated with the lowering of the quarry void will not be visible in this view. Some of the activities within the processing area will be distantly and therefore barely visible.



VIEWPOINT F: Regional Road at the entrance to St. John's GAA Club.
 Grid Reference (ITM): **569956:832524** Approximate Elevation: **23m AOD** Distance from application area: **410m** Direction of View: **South east**
Description: The existing application area, as well as the proposed works are/will be fully screened in all views from the R287 - Regional road, due to intervening topography and vegetation, as is illustrated by the above representative view.

SLR CONSULTING IRELAND
 7 DUNDUM BUSINESS PARK
 WINDY ARBOUR
 DUBLIN 14
 T: +353-1-2964667
 F: +353-1-2964676
 www.slrconsulting.com

LAGAN MATERIALS LTD.
 ENVIRONMENTAL IMPACT ASSESSMENT REPORT
 LIMESTONE QUARRY AT
 AGHAMORE AND
 CARROWNAMADDOO, CO. SLIGO
VIEWPOINTS E & F

FIGURE 13-5

Scale: N/A Date: APRIL 2021

00584.00019_Aghamore EIAR.Fig 13-1_2_3_4_5_VLIA.dwg