

Appendix 5 Landscape detailed scope



**STEPHENSON
HALLIDAY**

Planning, Landscape & Environment
an **RSK** company

MAES Y DROLL QUARRY

Landscape and Visual Scoping Report

J A Jackson Quarries and Recycling

March 2025

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Document history

	Name	Date
Author	Rosemary Walker CMLI	18/02/2025
Technical Reviewer	Elaina Kurs CMLI	18/02/2025
Approved	Elaina Kurs CMLI	06/03/2025

1 INTRODUCTION

- 1.1.1 Stephenson Halliday will undertake a Landscape and Visual Impact Assessment (LVIA) in accordance with published best practice; namely The Guidelines for Landscape and Visual Impact Assessment (Third Edition), Landscape Institute and IEMA 2013 (GLVIA3¹) and associated technical guidance notes published by the Landscape Institute.
- 1.1.2 The LVIA will be undertaken by Chartered Landscape Architects from Stephenson Halliday which is a Registered Practice of the Landscape Institute and IEMA. All work is prepared and reviewed internally by senior highly experienced landscape planners.
- 1.1.3 The following section sets out the scope and level of detail which Stephenson Halliday considers proportionate for the assessment given the scale and nature of the Proposed Development and site context; and should be read in conjunction with Figures LVIA 1 - LVIA 4.

2 STUDY AREA

- 2.1.1 Best practice guidance (GLVIA 3) states:
'Scoping should also identify the area of landscape that needs to be covered in assessing landscape effects ... The study area should include the site itself and the full extent of the wider landscape around it which the proposed development may influence in a significant manner.'
- 2.1.2 The best practice guidance also states:
'Scoping should identify the area that needs to be covered in assessing visual effect, the range of people who may be affected by these effects and the related viewpoints in the study area that will need to be examined. The study area should be agreed with the competent authority at the outset and should consider the area from which the proposed development will potentially be visible. The emphasis must be on a reasonable approach which is proportional to the scale and nature of the proposed development.'
- 2.1.3 Based on preliminary analysis informed by site visits and the Zone of Theoretical Visibility (ZTV) as noted in paragraph 1.1.20 below, it is proposed to set the study area as a 5 km offset from the perimeter of the Proposed Development (as shown in Figure LVIA 1). Initial analysis suggests that visibility will be constrained to a much closer proximity than this due to intervening landform and vegetation in the wider landscape.

3 BASELINE

- 3.1.1 Figures LVIA 2 and LVIA 4 identify the location of the Site and its baseline landscape context.

¹ Landscape Institute and IEMA. 2013. Guidelines for Landscape and Visual Impact Assessment (3rd Edition)

3.2 Sources of Baseline Information and Policy Context

3.2.1 The Proposed Development is located within Denbighshire County Council local authority area; the north-east of the study area is covered by Flintshire County Council.

3.2.2 The LVIA will therefore draw upon information in the following published documents:

- Denbighshire Local Development Plan 2006-2021 (June 2013)²;
- Flintshire Local Development Plan 2015-2030 (January 2023)³;
- Clwydian Range and Dee Valley Area of Outstanding Natural Beauty Supplementary Planning Guidance (SPG) (April 2018)⁴ – please note that Areas of Outstanding Natural Beauty are now known as National Landscapes;
- Clwydian Range and Dee Valley National Landscape Planning for the Dark Night Sky SPG (July 2020)⁵;
- Denbighshire Trees and Landscaping SPG (July 2016)⁶;
- LANDMAP (March 2024)⁷;
- Clwyd Landscape Assessment (1995)⁸;

² Denbighshire County Council (2013). Local Development Plan 2006-2021. Available at: <https://www.denbighshire.gov.uk/en/planning-and-building-regulations/local-development-plan/adopted-local-development-plan.aspx>

³ Flintshire County Council (2023). Flintshire Local Development Plan. Available at: <https://www.flintshire.gov.uk/en/Resident/Planning/Local-Development-Plan.aspx>

⁴ Denbighshire, Flintshire and Wrexham County Councils, Clwydian Range and Dee Valley NL Partnership (2018). Clwydian Range and Dee Valley Area of Outstanding Natural Beauty SPG. Available at: <https://www.denbighshire.gov.uk/en/documents/planning-and-building-regulations/ldp/supplementary-planning-guidance/adopted-spg-documents/clwydian-range-and-dee-valley-area-of-outstanding-natural-beauty.pdf>

⁵ Clwydian Range and Dee Valley NL Partnership (2020). Planning for the Dark Night Sky SPG. Available at: <https://www.clwydianrangeanddeevalleyaonb.org.uk/wp-content/uploads/2020/07/Dark-Skies-Strategy-Final.pdf>

⁶ Denbighshire County Council (2016). Trees and Landscaping SPG. Available at: <https://www.denbighshire.gov.uk/en/documents/planning-and-building-regulations/ldp/supplementary-planning-guidance/adopted-spg-documents/trees-landscaping.pdf>

⁷ Natural Resources Wales (2024). Using LANDMAP in Landscape and Visual Impact Assessments GN46. Available at: <https://naturalresources.wales/guidance-and-advice/business-sectors/planning-and-development/evidence-to-inform-development-planning/using-landmap-in-landscape-and-visual-impact-assessments-gn46/?lang=en#>

⁸ Clwyd County Council (1995). Clwyd Landscape Assessment. Not available online

- Denbighshire Landscape Strategy (2003)⁹; and
- Conwy and Denbighshire Landscape Sensitivity and Capacity Assessment For Wind Energy Development (May 2013)¹⁰.

3.3 Landscape Character

3.3.1 Landscape character is described within the NRW National Landscape Character Areas. These define a broad landscape scale suite of national character areas throughout Wales and are partly derived from LANDMAP. The Site is located within National Landscape Character Area (NLCA): 12 - Bryniau Clwyd / Clwydian Range¹¹, as updated in 2013.

3.3.2 More detailed landscape character assessments were prepared for Clwyd and for Denbighshire; these were published in 1995 and 2003 respectively. These landscape character assessments are not available online; however they are used within the Conwy and Denbighshire Landscape Sensitivity and Capacity Assessment For Wind Energy Development (May 2013). Whilst the latter assessment is primarily related to landscape sensitivity to wind development, it synthesises landscape character information from the previous 1995 and 2003 studies to form landscape units. These are presented alongside their key characteristics, which have been linked to the available LANDMAP data, thus updating the 1995 and 2003 studies. This forms the most up-to-date published landscape information for the county.

3.3.3 As illustrated by Figure LVIA 3, the Site lies within the following Landscape Unit (LU):

- LU B1: Gritstone Hills (Graianrhyd).

3.3.4 Immediately west of the Site is LU C2: Limestone Farmlands (Llandegla to Maeshafn).

3.3.5 The north-east of the study area lies within Flintshire; which does not have a dedicated landscape character assessment. Thus the LANDMAP visual and sensory aspect areas would inform character baseline within this part of the study area.

3.4 Visual Receptors

3.4.1 The LVIA will consider the potential effects of the Proposed Development on the visual amenity of the following groups of potential receptors:

- residents - in villages and isolated dwellings;

⁹ Denbighshire County Council (2003). Denbighshire Landscape Strategy. Not available online

¹⁰ Conwy County Council and Denbighshire County Council (2013). Conwy and Denbighshire Landscape Sensitivity and Capacity Assessment For Wind Energy Development. Available at: <https://www.denbighshire.gov.uk/en/documents/planning-and-building-regulations/ldp/evidence-monitoring-and-information/conwy-and-denbighshire-landscape-sensitivity-and-capacity-assessment-for-wind-energy-development.pdf>

¹¹ Natural Resources Wales. 2013. NLCA 12 Clwydian Range. Available at: <https://naturalresources.wales/evidence-and-data/maps/nlca/?lang=en>

- motorists and other users of A class and local roads; and
- walkers and tourists visiting recreational attractions.

3.5 Landscape Designations

- 3.5.1 Figures LVIA 2 and LVIA 3 illustrates the Site context within 5 km of its boundary. The northern part of the Site sits within the Clwydian Range and Dee Valley National Landscape, as shown on Figure LVIA 3. Figure LVIA 2 also illustrates the route of public footpaths as set out in the Denbighshire County Council Definitive Public Rights of Way Map¹² and the Flintshire County Council Definitive Public Rights of Way Map¹³.

4 ASSESSMENT METHODOLOGY

- 4.1.1 Stephenson Halliday will undertake a Landscape and Visual Impact Assessment (LVIA) in accordance with published best practice; namely The Guidelines for Landscape and Visual Impact Assessment (Third Edition), Landscape Institute and IEMA 2013 (GLVIA3¹⁴) and associated technical guidance notes published by the Landscape Institute.
- 4.1.2 The LVIA will be undertaken by Chartered Landscape Architects from Stephenson Halliday which is a Registered Practice of the Landscape Institute and IEMA. All work is prepared and reviewed internally by senior highly experienced landscape planners.
- 4.1.3 The detailed assessment criteria to be adopted will be set out in the LVIA.

5 SCOPE OF THE LVIA

- 5.1.1 Although linked, landscape and visual effects are considered separately. Landscape effects derive from changes in the landscape fabric, which may result in changes to the character, whereas visual effects are the effect of these changes as experienced by people (visual receptors). The LVIA will consider the potential effects upon:
- landscape fabric and landscape character;
 - visual receptors including residential, transport and recreational receptors; and
 - special qualities of the Clwydian Range and Dee Valley National Landscape.

¹² Denbighshire County Council. 2018. Denbighshire Definitive Public Rights of Way Map. Available at: <https://www.data.gov.uk/dataset/daa95446-2040-4951-bedd-4c6ddb501c92/denbighshire-public-rights-of-way>

¹³ Flintshire County Council. No date. Flintshire Definitive Public Rights of Way Map. Available at: <https://rightsofway.flintshire.gov.uk/standardmap.aspx>

¹⁴ Landscape Institute and IEMA. 2013. Guidelines for Landscape and Visual Impact Assessment (3rd Edition)

5.1.2 Landscape and visual effects during both the operational phases and those after full restoration will be assessed. The assessment will consider the following scenarios:

- operational effects: a comparison between the current approved scheme (which includes the consented quarry operations) and the Proposed Development (which includes the northern extension operations and deepening within the existing consented Quarry) during the respective operational phases; and
- post-restoration effects: a comparison between the current approved restoration scheme and the proposed restoration scheme as a result of the Proposed Development.

5.2 Cumulative Effects

5.2.1 The Tarmac-operated Graig Quarry is located approximately 800m west of the Site and will be considered within cumulative assessment. If the planning authority is aware of any other proposals or cumulative effects which should be considered, then this information should be provided.

5.3 Lighting Effects

5.3.1 The working hours for the Proposed Development would result in some working in the hours of darkness (early morning from 7am and early evening until 7pm) in the winter months. Considering this and the Site's proximity to the Clwydian Range and Dee Valley National Landscape, effects of lighting will be considered within the LVIA. This will be in reference to the National Landscape's Planning for the Dark Night Sky policy guidance.

6 PRELIMINARY APPRAISAL OF POTENTIAL VISIBILITY AND SELECTION OF VIEWPOINTS

6.1 Potential Visibility

6.1.1 A Zone of Theoretical Visibility (ZTV) showing the theoretical extent of visibility of the Proposed Development is presented in Figure LVIA 1. The ZTV takes account of the screening effect provided by blocks of woodland and buildings but not hedgerows or individual trees.

6.1.2 Potential visibility of the Proposed Development within the surrounding landscape would be mostly confined to the area immediately surrounding the Site and out to approximately 2 km east, west and south. There would be very limited visibility to the north within 2 km of the Site boundary.

6.1.3 Beyond 2 km, visibility would extend in a more fragmented pattern to higher ground in the west, south and east (approximately 4-5 km from the Site boundary), with very little visibility elsewhere.

6.1.4 Initial desk study suggests that the actual zone of visibility within the study area would be further constrained by trees and hedgerows which are frequent and mature in this landscape.

6.2 Proposed LVIA Viewpoints

6.2.1 Based on the ZTV analysis and site visits, eight viewpoints have been identified by Stephenson Halliday for adoption in the LVIA (see Table 6.1 below). It is proposed that the assessment of landscape and visual effects will be adequately illustrated with reference to annotated photographs (Landscape Institute Type 1 visualisation) from these locations.

Table 6.1 Potential LVIA Viewpoints

Viewpoint number	Viewpoint title	Distance and direction from Site	Receptors represented
1	Junction of Llanarmon-yn-lal Footpath 15 and Llanarmon-yn-lal Footpath 87 adjacent to eastern boundary of the Site	0 m to the east of the Site	Recreational, residential and road users
2	Llanarmon-yn-lal Footpath 18	0 m to the north of the Site	Recreational, Clwydian Range and Dee Valley National Landscape
3	Junction of Llanarmon-yn-lal Bridleway 20 and Llanarmon-yn-lal Footpath 100	400 m to the west of the Site	Recreational
4	Llanarmon-yn-lal Footpath 10 near Cae-gwyu	600 m to the south-west of the Site	Recreational and residential
5	Llandegla Footpath 10 at Llyn Cyfynwy	1.3 km to the south of the Site	Recreational and residential, Clwydian Range and Dee Valley National Landscape
6	Llanfynydd Bridleway 42 at Pantterfyn	2.5 km to the south-east of the Site	Recreational and residential
7	Treuddyn Footpath 38 immediately west of Treuddyn	3.25 km to the north-east of the Site	Recreational and residential
8	Offa's Dyke Path (Llanarmon-yn-lal Footpath 73) near Moel y Plâs	4.75 km to the west of the Site	Recreational, Clwydian Range and Dee Valley National Landscape

6.3 Embedded Mitigation

6.3.1 Landscape and visual mitigation has been and will continue to be embedded within the design of the Proposed Development. This can include elements such as:

- the retention of existing vegetation (where possible, in order to retain landscape features and characteristics and make use of existing mature vegetation for screening purposes);
- provision of landscape planting (used for reinforcement or enhancement of landscape character, as well as screening);

- phased extraction and progressive restoration (reducing the duration of perceived effects in different parts of the Site during different phases of working);
- landscape buffers/stand-offs and bunds (where appropriate, to reduce visual effects); and
- provision of a restoration scheme which would restore the Site to its original condition (or an approved alternative) following completion of extraction activity (in order to retain and enhance the landscape character and restore the visual amenity to its baseline state or an improved state).

7 CONCLUSION

7.1.1 Landscape and visual effects that will form part of the LVIA are set out below.

7.1.2 Notable effects on landscape character are likely to be localised and limited to parts of the landscape within the LU B1: Gritstone Hills (Graianrhyd) and LU C2: Limestone Farmlands (Llandegla to Maeshafn) from the Conwy and Denbighshire Landscape Sensitivity and Capacity Assessment For Wind Energy Development. Effects on other landscape character units and LANDMAP aspect areas within the study area are likely to be limited and will not form part of the detailed assessment.

7.1.3 The northern part of the Site lies in the Clwydian Range and Dee Valley National Landscape and there is the potential for significant effects on its character and special qualities. This will be assessed within the LVIA.

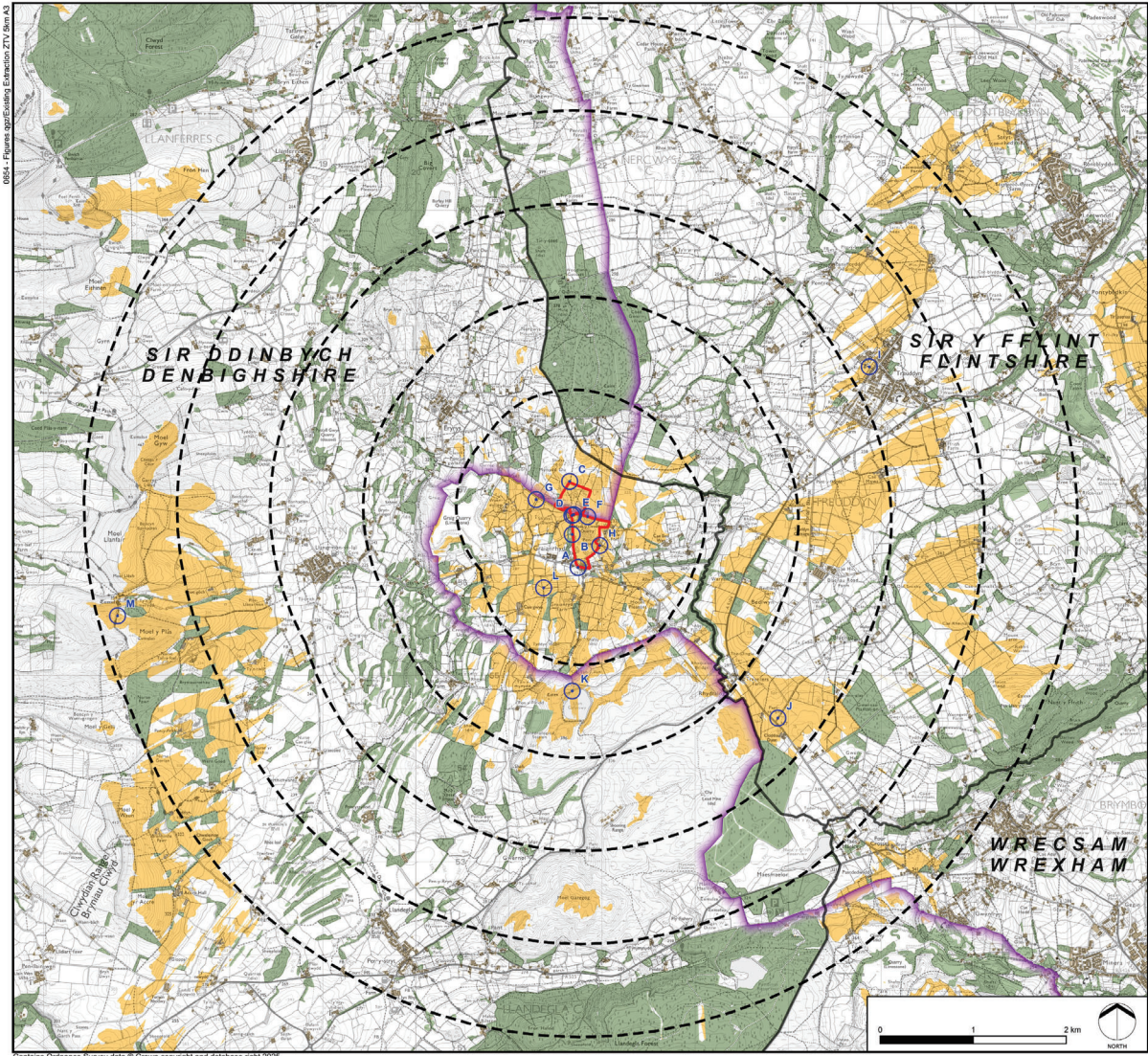
7.1.4 Based on an initial analysis, the main visual receptors of the Proposed Development are likely to be as follows:

- residents within 1 km from the Site boundary, including those at Pen y Foel (immediately east of the Site);
- recreational users on PRow in the Clwydian Range and Dee Valley National Landscape located within 1.5 km of the Site boundary;
- recreational users on PRow outside of the Clwydian Range and Dee Valley National Landscape located within 1 km of the Site boundary; and
- users of local roads.

7.1.5 Cumulative effects will be considered in relation to the Proposed Development and Graig Quarry.

7.1.6 Lighting requirements and subsequent effects on landscape and visual receptors during early mornings and evening operations will be included in the LVIA in line with the Planning for the Dark Night Sky SPG from Clwydian Range and Dee Valley National Landscape Partnership.

7.1.7 Stephenson Halliday considers the above scope proportionate for the LVIA given the scale and nature of the Proposed Development and site context. If the MPA take a contrary view, the parameters for the LVIA along with a justification should be provided.



MAES Y DROLL QUARRY

FIGURE LVIA1

Zone of Theoretical Visibility With Screening
Effect of Woodland and Settlement - Extraction
Areas

KEY

- Application Site Boundary
- Distance Radii from Site (1, 2, 3, 4, 5km)
- Viewpoints
- Existing Woodland (modelled at 15m)
- Existing Buildings (modelled at 7.5m)
- Local Authority Boundaries
- Chwydian Range and Dee Valley National Landscape
- Zone of Theoretical Visibility**
 - Extraction areas may be visible

FIGURE DATA:
This figure has been based on the following data:

Layout file: D001-obs-0m-T5-5km.shp
Terrain data: T5-DSM-AH.asc
Viewer's eye height: 2m above ground level
Calculation grid size: 5m

NOTES:
This drawing is based upon computer generated Zone of Theoretical
Visibility (ZTV) studies produced using the Viewshed routine in the
Visibility Analysis plugin for QGIS.

The areas shown are the maximum theoretical visibility, taking into
account topography, principal woodlands and buildings.

A digital surface model (DSM) has been derived from OS Terrain 5
height data with the locations of buildings and woodland are taken from
the OS Open Map Local dataset. Buildings have been modelled with
an assumed height of 7.5m and woodland an assumed height of 15m,
representing a conservative estimate of average heights within the
study area.

The model does not take into account some localised features such as
small copses, hedgerows or individual trees and therefore still gives an
exaggerated impression of the extent of visibility. The actual extent of
visibility on the ground will be less than that suggested by this plan.

The ZTV includes an adjustment that allows for Earth's curvature and
light refraction. It is based on a derived DSM and has a 5m² resolution.

Projected Coordinate System: OSGB36 / British National Grid

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MAES Y DROLL QUARRY

FIGURE LVIA2

Zone of Theoretical Visibility With Screening
Effect of Woodland and Settlement - Phase 2
Plant

KEY

- Application Site Boundary
 - Distance Radii from Site (1, 2, 3, 4, 5km)
 - Viewpoints
 - Existing Woodland (modelled at 15m)
 - Existing Buildings (modelled at 7.5m)
 - Local Authority Boundaries
 - Chwydian Range and Dee Valley National Landscape
- Zone of Theoretical Visibility**
- Phase 2 plant may be visible

FIGURE DATA:

This figure has been based on the following data:

Layout file: D001-obsv-phase2-13p62m-T5-10km.shp
Terrain data: T5-DSM-AH.asc
Viewer's eye height: 2m above ground level
Calculation grid size: 5m

NOTES:

This drawing is based upon computer generated Zone of Theoretical Visibility (ZTV) studies produced using the Viewshed routine in the Visibility Analysis plugin for QGIS.

The areas shown are the maximum theoretical visibility, taking into account topography, principal woodlands and buildings.

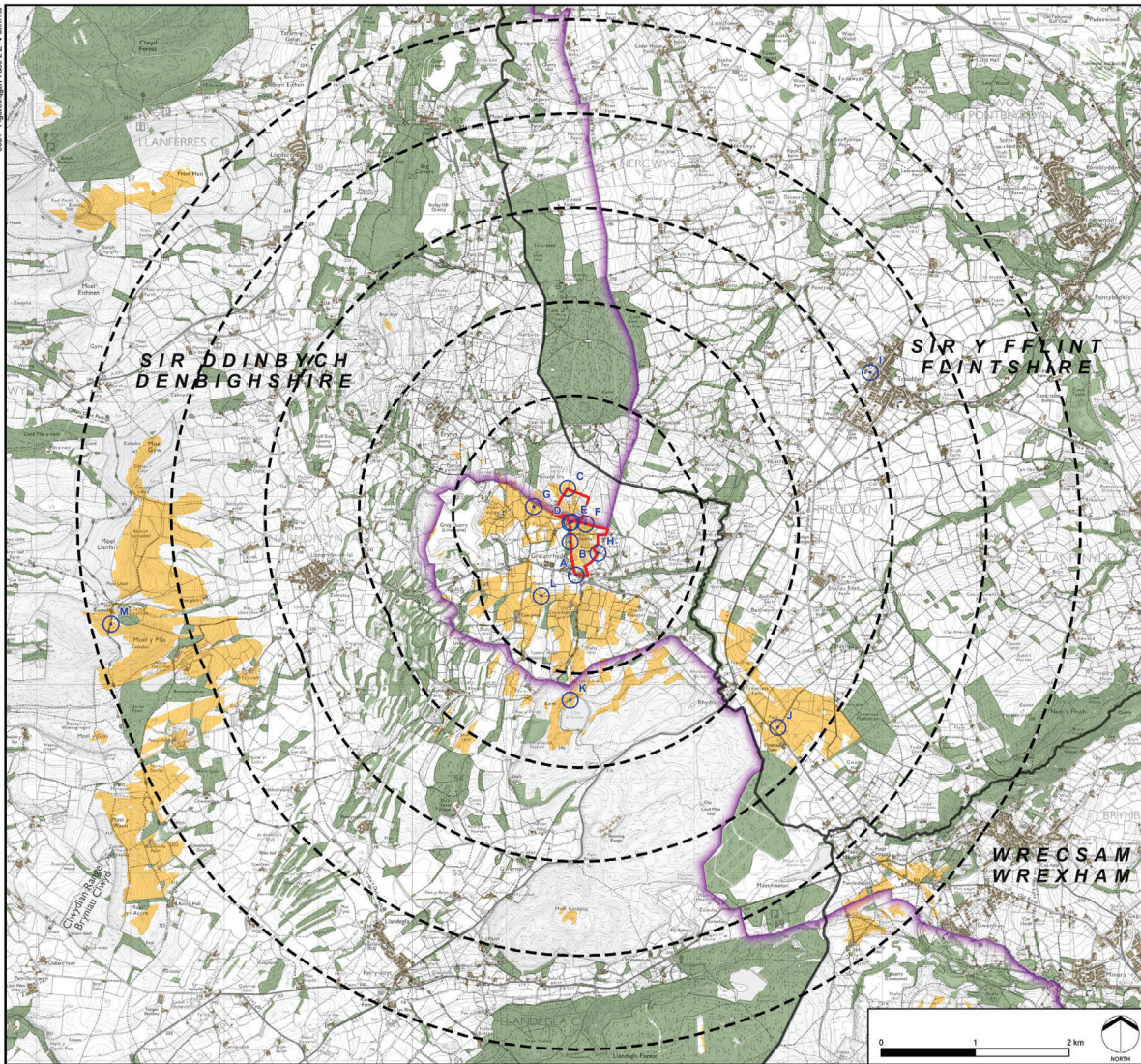
A digital surface model (DSM) has been derived from OS Terrain 5 height data with the locations of buildings and woodland taken from the OS Open Map Local dataset. Buildings have been modelled with an assumed height of 7.5m and woodland an assumed height of 15m, representing a conservative estimate of average heights within the study area.

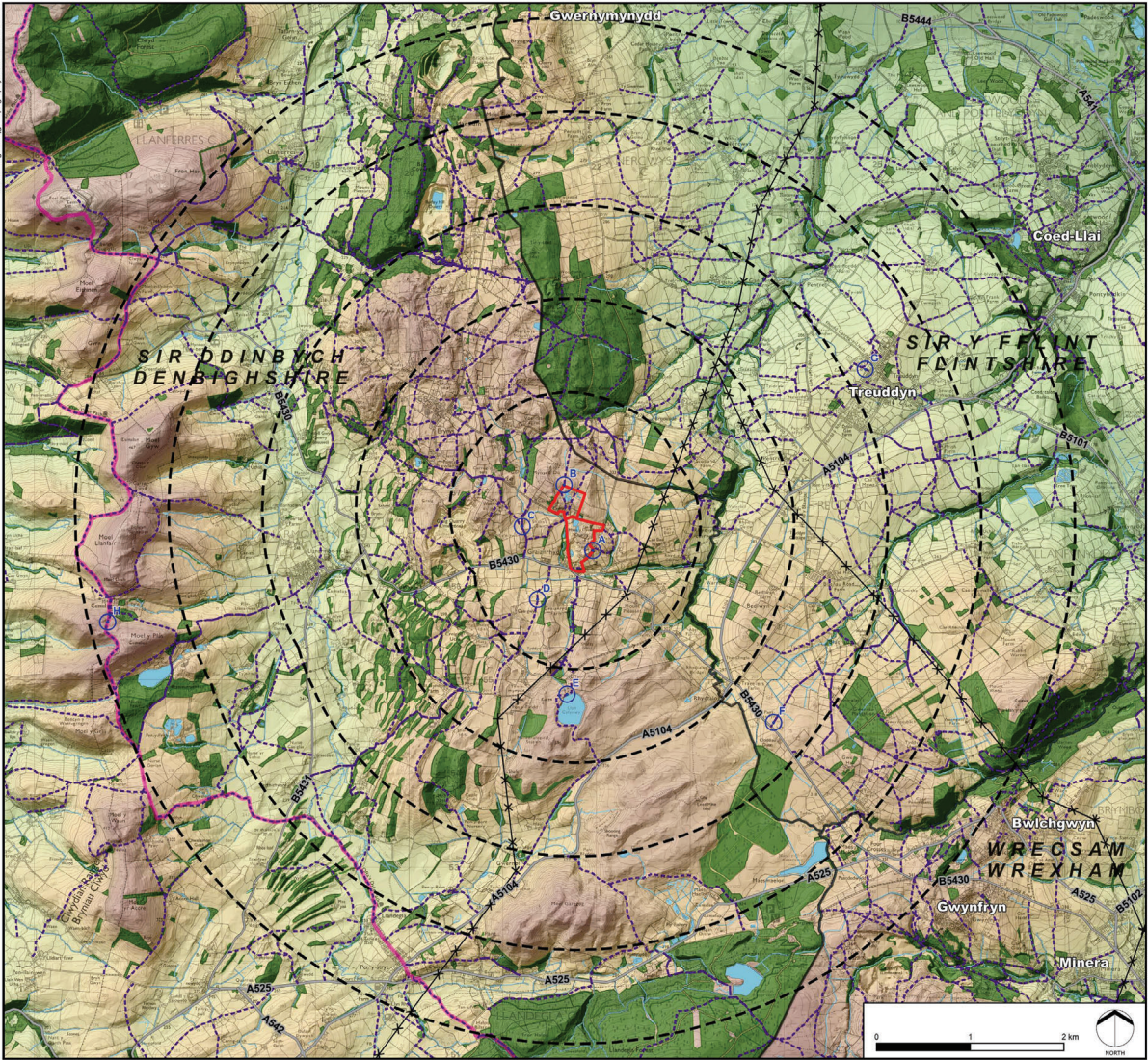
The model does not take into account some localised features such as small copses, hedgerows or individual trees and therefore still gives an exaggerated impression of the extent of visibility. The actual extent of visibility on the ground will be less than that suggested by this plan.

The ZTV includes an adjustment that allows for Earth's curvature and light refraction. It is based on a derived DSM and has a 5m² resolution.

Projected Coordinate System: OSGB36 / British National Grid

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MAES Y DROLL QUARRY

FIGURE LVIA3
Topography, Landcover and Landscape Context

KEY

- Application Site Boundary
- Distance Radii from Site (1, 2, 3, 4, 5km)
- Viewpoints
- Local Authority Boundaries
- Offa's Dyke National Trail
- Bridleway
- Byway Open to All Traffic
- Footpath
- Primary Road
- Secondary Road
- Overhead Line with Pylon
- Watercourse/Waterbody
- Woodland

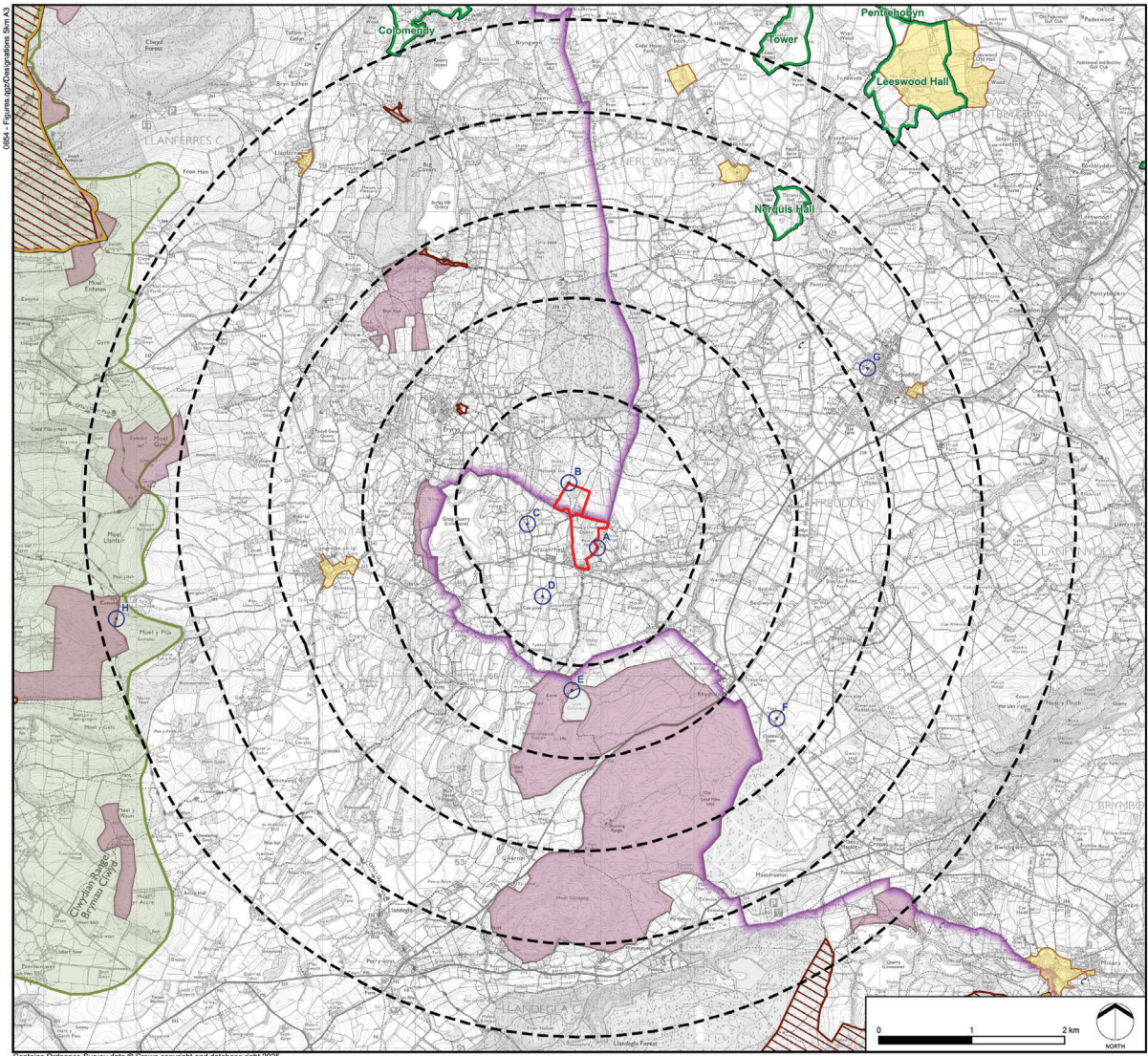
Elevation (m AOD)

520

80

Projected Coordinate System: OSGB36 / British National Grid

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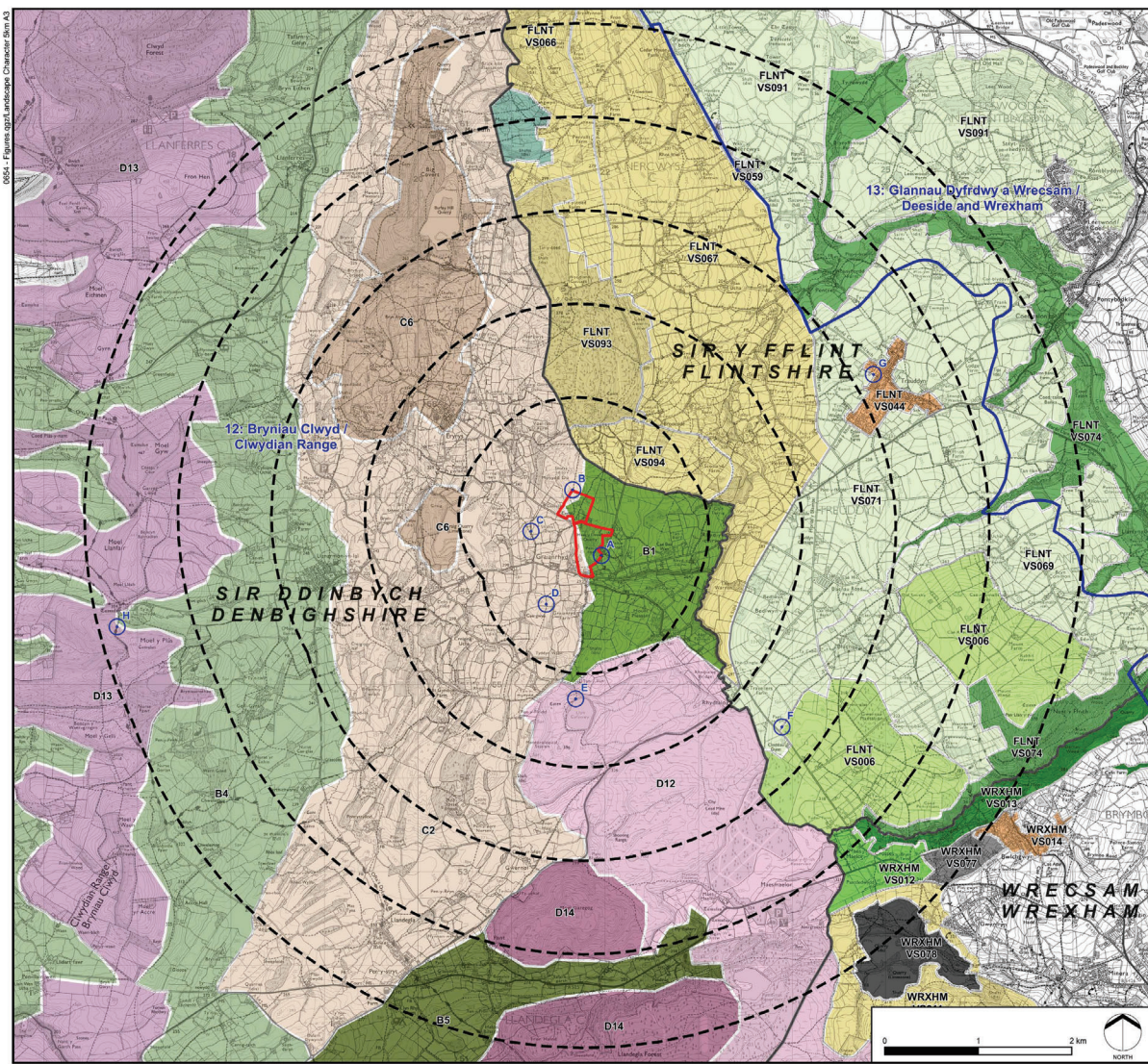


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FIGURE LVIA4
Designations

- KEY**
- Application Site Boundary
 - Distance Radii from Site (1, 2, 3, 4, 5km)
 - Viewpoints
 - Clwydian Range and Dee Valley National Landscape
 - Vale of Clwyd Historic Landscape
 - Registered Historic Parks and Gardens
 - Conservation Areas
 - Common Land
 - Open Country
 - Country Parks



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FIGURE LVIA5

Landscape Character

KEY

- Application Site Boundary
- Distance Radii from Site (1, 2, 3, 4, 5km)
- Viewpoints
- Local Authority Boundaries
- National Landscape Character
- National Landscape Character Areas

Denbighshire

Conwy and Denbighshire Landscape Sensitivity and Capacity Assessment for Wind Energy Development

- B1: Deep Valleys (Aled and Elwy)
- B4: Hill Slopes (Clwydian Range Hill Slopes)
- B5: Hill Slopes (Morwynion Valley)
- C2: Limestone Farmlands (Llandegla to Maesafn)
- C6: Limestone Escarpment and Hills (Bryn Alun - Maesafn Escarpment)
- D12: Moorland Plateau (Cwm y Brain - Eglwysseg Mountains)
- D13: Moorland Ridge (Clwydian Ridgeline)
- D14: Moorland Ridge (Llantsyllio Ridgeline)

Flintshire and Wrexham

LANDMAP Visual and Sensory

- Derelict/Waste Ground
- Dispersed Settlement
- Excavation
- Hillside & Scarp Slopes Grazing
- Hillside & Scarp Slopes Mosaic
- Mosaic Rolling Lowland
- Open Hillside & Scarp Slopes
- Upland Grazing
- Upland Moorland
- Village
- Wooded Lowland Valleys
- Wooded Upland Valleys

Projected Coordinate System: OSGB36 / British National Grid

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Appendix 6 Transport Scope

ES Scoping Note: Transport

Maes Y Droell Quarry Graianrhyd Road, Llanarmon-yn-Iâl, Mold

Date: 4th March 2025

Our reference: SCP/241240/01

Denbighshire County Council Ref: 15/2023/0813

INTRODUCTION

1. SCP are appointed by Stephenson Halliday to provide transport planning consultancy services in relation to proposals at Maes-y-Droll Quarry.
2. An assessment of the likely environmental effects of the Proposed Development on the local transport network will be undertaken by SCP Transport.
3. The Traffic and Transport Chapter of the ES will report and build upon the findings of the Transport Assessment which, which will form an Appendix to the ES. It will provide a detailed description of the baseline transport environment and include an assessment of the likely effects of the development on the operation of the local highway and rail network, user / driver delay, pedestrian delay and amenity, fear and intimidation, severance and road safety. Effects will be assessed for the construction and operational phases of the Proposed Development.

BASELINE CONDITIONS

4. In order to assess the likely environmental effects of the Proposed Development, the baseline conditions of the local transport network must first be established. Therefore, the existing local highway network infrastructure will be reviewed in combination with a road traffic accident assessment and baseline traffic flows, including background traffic growth and any material committed developments.

POTENTIAL IMPACTS

5. The potential impact of the Proposed Development relates to changes in the operation of the local transport network user / driver delay, pedestrian delay and amenity, fear and intimidation, severance and road safety.

PROPOSED SCOPE AND METHODOLOGY OF ASSESSMENT

6. The Transport Assessment will identify the nature of the transport changes within the vicinity of the site to assess the significance and to make appropriate recommendations. The proposed study area for the Transport Assessment is to be agreed with the local highway authority and at this stage it is proposed to include the following links including connecting junctions :
 - Unclassified Access Road along western site boundary
 - B5430 Graianrhyd Road
 - Ffordd Llanarmon
7. The Transport Assessment will include the following and be an Appendix to the ES:
 - Baseline Conditions – a detailed description of the site location, surrounding area and uses, local highway network, existing traffic conditions and 5-year road safety record;
 - Proposed Development – a detailed description of the proposed development including the access strategy, servicing and car parking arrangements;
 - Policy Analysis – a summary of the relevant national, regional and local transport policies along with an analysis of how the proposed development accords with these;
 - Accessibility – an assessment of the location of the site with regard to the existing local sustainable transport infrastructure;
 - Future Baseline Traffic Conditions – an assessment of the future baseline traffic conditions on the local highway network in relation to committed development traffic flows and traffic growth;
 - Trip Generation and Distribution – estimates of the number of multimodal trips generated by the development during the construction and operational phases, along with their distribution and assignment on the local highway network; and
 - Highway Impact – detailed operational assessments of the junctions within the study area during the weekday AM and PM peak hours, along with the identification of associated mitigation measures.
8. The Transport Assessment shall examine the transport implications and transport strategy requirements of the development in relation to relevant guidance, which will include:

- Design Manual for Roads and Bridges (DMRB)
- Planning Policy Wales (PPW) Edition 11 (February 2021)
- Planning Policy Wales Technical Advice Note 18: TRANSPORT (March 2007)
- Welsh Government Active Travel Act Guidance July 2021
- Manual for Streets (MfS) (2007)
- Manual for Streets 2 (MfS2) (2010)
- Denbighshire Local Development Plan (LDP) 2006 – 2021
- IEMA Guidelines for the Environmental Assessment of Road Traffic (2023)

Desk Based Studies

9. This sub-section outlines how traffic flow information will be derived and then presents the proposed methodology for assessing the traffic and transportation effects of the Proposed Development.

Forecast Base Traffic Flows

10. The forecast traffic growth will be determined through reference to NTM and Temprow Local Growth Factors. In addition, the Transport Assessment will review committed developments in the local area and take any material committed developments into account in the assessments.

Development Generated Traffic Flows

11. The level of traffic generated by the Proposed Development will be estimated based on the first principles approach and information provided by the applicant and design team. The subsequent traffic flows generated by the Proposed Development during the AM and PM peak hours will be distributed onto the local highway network. These flows will be used to establish the peak hour traffic impact of the development scheme.

Field Surveys

12. Traffic flow surveys will be undertaken to provide traffic flows on the links within the study area, during a neutral traffic month as defined by the Department for Transport.

Assessing the Significance of Effect

13. The IEMA Guidance lists seven transport related environmental impacts which have been presented in the Table below:

Table 1: IEMA Transport Related Environmental Impacts

Driver Delay
Impacts on Public Transport Users
Pedestrian Delay and Amenity
Impacts on Fear and Intimidation
Severance
Accidents and Safety
Hazardous Loads

14. The seven categories in the above table will form the basis of the ES Transport Chapter in order to assess the impact of the development.
15. The broad principles of how to evaluate the magnitude of effect for each theme is set out within The IEMA's Guidelines for the Environmental Assessment of Road Traffic with the approach to be adopted in the ES Chapter being summarised below.

Driver Delay

16. IEMA guidelines note that driver delay can occur at several points on the network, although the effects are only likely to be significant when the traffic on the highway network is predicted to be at or close to the capacity of the system.
17. The junctions identified earlier will be assessed for future operation and capacity. The modelling software used in these assessments will provide outputs on driver delay at each junction in the 'with' and 'without' development scenarios.

Impacts on Public Transport Users

18. There is no industry guidance on the assessment of public transport users. The assessments of the operation of the local highway network will be used to establish any increased delays to bus users by considering the bus routes and services within the Study Area.

Impacts on Pedestrian Delay and Amenity

19. IEMA guidelines state that the volume, composition or speed of traffic may affect the ability of people to cross roads. The guidance proposes that evaluators “... *use their judgement to determine whether pedestrian delay is a significant impact*”.
20. Guidelines for the calculation of pedestrian delay are identified in the Design Manual for Roads and Bridges (DMRB) Volume 11, Section 3. The determination of a material impact on pedestrian delay and amenity is not precisely defined, but should be made with “*knowledge of local factors and conditions*”.
21. In relation to Pedestrian Amenity, this is broadly defined as the relative pleasantness of a journey which can be affected by traffic flow and traffic composition as well as pavement width and separation from traffic. The guidance suggests a tentative threshold for judging the significance of changes in pedestrian amenity of where traffic flow (or its HGV composition) is halved or doubled.

Impacts on Fear and Intimidation

22. The impact of this is dependent upon the amount of traffic, its HGV composition and its proximity to people or the lack of protection caused by narrow pavement widths, for example. The guidance states that there are no widely acceptable thresholds for estimating this from known traffic and physical conditions, however, it does suggest some thresholds which could be used based on previous research and these are presented in the Table below:

Table 2: Potential Thresholds for Assessing Impact on Fear and Intimidation

Degree of Hazard	Average traffic flow over 18hr day – (vehicles/hour 2-way)	Total 18 hour HGV flow	Average Vehicle Speed over 18 hour day (mph)
Extreme	+1,800	+ 3,000	+ 20
Great	1,200 – 1,800	2,000 – 3,000	15 – 20
Moderate	600 – 1,200	1,000 – 2,000	10 – 15

23. The above table identifies how a potential change in the degree of hazard can be used to determine the scale of impact of the development proposals upon the levels of fear and intimidation on the surrounding network.

Severance

24. The guidance states that “*severance is the perceived division that can occur within a community when it becomes separated by a major traffic artery*”. Furthermore, “*Changes in traffic flow of 30%, 60% and 90% are regarded as producing ‘slight’, ‘moderate’ and ‘substantial’ changes in severance respectively*”.
25. The guidance acknowledges, however, that it is particularly difficult to predict and measure severance. Specific local conditions, in particular the location of pedestrian routes to key local facilities and whether or not crossing facilities are provided are key in the assessment of severance.

Impacts on Road Safety

26. A detailed appraisal of the potential effects of the Proposed Development upon accidents and safety will be covered in the TA. The guidance states that “*Professional judgement will be needed to assess the implications of local circumstances, or factors, which may elevate or lessen risks of accidents, e.g. junction conflicts*”.

Hazardous Loads

27. IEMA guidelines suggests that the ES needs to clearly outline the estimated quantity and composition of such loads, but that the analysis should reflect the nature of the load in question. It is recognised within the IEMA guidelines that the majority of developments won’t result in an intensification in the number of movements of hazardous/dangerous loads, as will be the case with this development.

Magnitude of Effect

28. Based on the above assessments, the magnitude of the effect occurring i.e. the changes to the existing baseline conditions as a result of the Proposed Development, and the sensitivity or importance of the receiving environment or receptor will be defined in accordance with the following Table:

Table 3: Magnitude of Effect

Level of Magnitude	Effect On	Definition of Magnitude
High	Driver Delay	Over 5 minute increase, averaged over all arms at a junction.
	Public transport users	Over 5 minute increase in delay along bus routes in vicinity of site.
	Pedestrian delay	Over 5 minute increase in delay for pedestrians at crossing point.
	Pedestrian amenity	Doubling of traffic flow where the footway width is sub-standard (versus current design standards).
	Fear and intimidation	Change in degree of hazard from moderate to extreme.
	Severance	Over 90% increase in traffic flows on relevant links
	Accidents and road safety	Over 50% increase in traffic flows at location with existing adverse accident record (blackspot).
Moderate	Driver Delay	Between 3 – 5 minute increase in delay, averaged over all arms at a junction.
	Public transport users	Between 3 – 5 minute increase in delay along bus route in vicinity of site.
	Pedestrian delay	Between 3 - 5 minute increase in delay for pedestrians at crossing point.
	Pedestrian amenity	Between 50%-100% increase in traffic flow where the footway width is sub-standard.
	Fear and intimidation	Change in degree of hazard from great to extreme.
	Severance	Between 60%-90% increase in traffic flows on relevant links.
	Accidents and road safety	30%-50% increase in traffic flows at location with accident rate above DMRB default for junction type.
Minor	Driver Delay	Between 2 - 3 minute increase in delay, averaged over all arms at junction.
	Public transport users	Between 2 - 3 minute increase in delay along bus route in vicinity of site.

	Pedestrian delay	Between 2 - 3 minute increase in delay for pedestrians at crossing point.
	Pedestrian amenity	Doubling of traffic flow where the footway width is satisfactory or up to 50% increase where the footway width is sub-standard.
	Fear and intimidation	Change in degree of hazard from moderate to great.
	Severance	Between 30%-60% increase in traffic flows on relevant links.
	Accidents and road safety	10%-30% increase in traffic flows at location with accident rate above DMRB default for junction type.
Negligible	Driver Delay	Less than 2 minute increase in delay, averaged over all arms at a junction.
	Public transport users	Less than 2 minute increase in delay along bus route in vicinity of site.
	Pedestrian delay	Less than 2 minute increase in delay for pedestrians at crossing point.
	Pedestrian amenity	Less than doubling of traffic flow where the footway width is satisfactory.
	Fear and intimidation	No change in degree of hazard.
	Severance	Less than 30% increase in traffic flows on relevant links.
	Accidents and road safety	Less than 10% increase in traffic flows at location with accident rate above DMRB default for junction type.

Sensitivity of Receptors

29. Receptors will comprise drivers and other users of the highway affected by increased traffic levels resulting from the Proposed Development. The importance of the receptors, based on professional judgment and experience, is as follows:

Table 4: Sensitivity Receptors

Sensitivity of Receptor	Development Receptors
Very High	Drivers, pedestrians, cyclists and public transport users within TA study area
High	Drivers, pedestrians, cyclists and public transport users within TA study area
Moderate	Drivers, pedestrians, cyclists and public transport users within TA study area
Low	Drivers, pedestrians, cyclists and public transport users within TA study area
Negligible	None/ Beyond Study Area

Duration of the Effect

30. The duration of effects will be taken into consideration when determining the overall significance of the effects. The timescales that will be used are shown in the Table below (these timescales will be used unless stated otherwise, in accordance with applicable guidance to the topic assessment):

Table 5: Duration of Effect

Timescale	Definition
Short Term	0 to 10 years including the construction period and on completion
Medium Term	10 to 20 years including establishment of any proposed mitigation
Long Term	20 years onwards for the life of the Proposed Development

Significance of the Effect

31. The following matrix will be used to assess the significance of effects:

Table 6: Example Matrix for Assessing the Significance of Effects

Magnitude of Effect	Sensitivity of Receptor

	Very High	High	Moderate
High	Major	Moderate	Minor
Moderate	Major	Moderate	None
Minor	Moderate	Minor	None
Negligible	Minor	None	None

Proposed Cumulative Assessment

32. The EIA Regulations 2017 require a description of the likely significant effects resulting from cumulative impacts to be included in the ES. When considering cumulative effects the ES will provide information on how the potential effects of the Proposed Development will combine and interact with the effects of other major developments (“inter-project cumulative effects”), and will also assess the potential effects between topic areas of the Proposed Development (“intra-project effects”).

POSSIBLE MITIGATION AND ENHANCEMENT

33. This section of the ES Chapter will set out the means by which any likely significant environmental impacts identified in the preceding assessment of construction and operation phase impacts is to be mitigated. The purpose of the mitigation measure will be to prevent, reduce or offset any likely significant environmental effects.
34. The ES will identify any residual environmental effects and their significance taking account of the application of the mitigation measures. Appropriate mitigation measures will be identified through the TA process.

Proposed Assessments to be Scoped Out

35. The ES will provide no consideration of any links beyond those outlined earlier. This is on the basis that changes in traffic flows beyond this area will not be material.

SUMMARY

36. This section of the ES Chapter will summarise the effects on the seven transport related environmental impacts outlined earlier of the Proposed Development.