



Foel Fach Wind Farm Limited.

Foel Fach Wind Farm - Environmental Statement Volume II

Main Written Statement – Chapter 11

Project Reference: 664094

This chapter is summarised within the Non-Technical Summary of this Environmental Statement

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11 TRAFFIC AND TRANSPORT

11.1 Introduction

11.1.1 This chapter presents an assessment of likely significant effects arising from the construction phase of the Proposed Development with respect to Traffic and Transport on receptors along the transport routes used to transport materials and components to and from the Site. The operational and decommissioning phases of the Proposed Development have been scoped out of the assessment as detailed in **Section 11.2 Scope of the Assessment**, paragraph **11.2.6**.

11.1.2 The specific objectives of the chapter are to:

- describe the assessment methodology and significance criteria used in completing the impact assessment;
- describe the traffic, and transport baseline conditions (including future baseline);
- describe any likely impacts and effects of the Proposed Development on the receptors identified through the baseline assessment;
- describe the mitigation measures proposed to address any likely significant adverse effects;
- assess the residual effects remaining following the implementation of mitigation; and
- describe any likely cumulative effects of the Proposed Development combining and interacting with the residual environmental effects of committed developments.

11.1.3 This chapter is supported by Environmental Statement (ES) **Volume III, Appendix 11.1: Transport Assessment**.

11.1.4 This chapter is supported by the following figures presented in **ES Volume IV**:

- Figure 11.1: Study Area
- Figure 11.2: Traffic Count Locations
- Figure 11.3: Personal Injury Accident Plan, and
- Figure 11.4: Abnormal Indivisible Loads Route.

11.1.5 This chapter should be read in conjunction with **ES Volume II, Chapter 2: Description of the Proposed Development**.



11.2 Consultation and Scope

Scoping Direction

- 11.2.1 The scope of this assessment has been established through an ongoing scoping process. This has involved the production of an EIA Scoping Report (provided in **ES Volume III, Appendix 1.1: EIA Scoping Report**), which was submitted to the Planning and Environment Decisions Wales (PEDW) in July 2024. Further information on the scoping process can be found in **ES Volume II, Chapter 4: Approach to the EIA**.
- 11.2.2 The Scoping Direction, a copy of which is included in **ES Volume III, Appendix 1.2: EIA Scoping Direction and Addendum**, was received on the 05 and 18 of December 2024. **Table 11.1** summarises the key Scoping Direction comments related to this assessment and sets out where and / or how these have been addressed in this assessment.

Table 11.1 Summary of Scoping Direction Comments Relevant to this Traffic and Transport Assessment

ID no.	Issue	Comment Raised	Applicant Response
ID.77	Consultation	As a significant proportion of the B4501 is within Conwy County Borough, its highway authority should also be consulted.	Conwy County Borough Council (CCBC) were consulted as part of the additional scoping consultations with neighbouring authorities. However, no correspondence was received from CCBC's highways team.
ID.78	Trunk Road Network	The applicant must identify and provide full details of all accommodation works required on the trunk road network to facilitate the transportation of development components.	Full details of any works required to facilitate the delivery of Abnormal Indivisible Loads (AILs) are detailed in the Route Survey Report (RSR), which is provided in ES Volume III, Appendix 11.1: Transport Assessment .
ID.79	Abnormal Indivisible Loads (AILs)	The impact of AIL movements must be assessed, following the draft guidance document 'Pulling Together' - Best Practice for Transporting Abnormal Loads in Wales. The applicant should liaise directly with the Welsh Government Transport Directorate.	The Route Survey Report (RSR) is provided Appendix 11.1 . The Welsh Government were contacted as part of the review of the structures on the proposed access route. The RSR and Transport Management Plan (TMP), provided in Appendix 11.1 , have both been prepared taking cognisance of the draft guidance document 'Pulling Together' - Best Practice for Transporting Abnormal Loads in Wales.
ID.80	Transport Assessment	The TA must assess impacts on the trunk road network due to construction-phase HGV and AIL movements. PEDW recommends direct liaison with the Transport Directorate and highway authorities to agree the TA scope.	An impact assessment on the surrounding road network, including the trunk road network, has been undertaken and can be seen within the TA (Appendix 11.1). This is also summarised as Table 11.2 within this chapter. Scoping Direction responses from relevant highways authorities have informed the TA and based on these no further consultation was deemed necessary to inform the assessment.
ID.81	Environmental impacts on the Strategic	The Transport Directorate should be consulted regarding environmental impacts on the Strategic Road network	Comment noted. Scoping response from the Welsh Government has been received and, where relevant, impacts have been included within this assessment.

ID no.	Issue	Comment Raised	Applicant Response
	Road network and soft estate	and associated soft estate. Impacts must be assessed, mitigated where necessary, and proportionately addressed in the ES.	
ID.82	Decommissioning	The potential significant effects of decommissioning (including transport of AILs and increased HGV traffic) must be assessed. PEDW advises that decommissioning should be proportionately explored in the Environmental Statement (ES).	<p>It is not yet known what elements of the Proposed Development will be kept in place; however, it is anticipated the traffic flows associated with the decommissioning works will be lower than those associated with the construction phase.</p> <p>Decommissioning would be undertaken in line with best practice processes and methods at that time and will be managed through an agreed Decommissioning Environmental Management Plan. It is proposed that this will form a planning condition should planning consent be granted.</p> <p>A detailed assessment of decommissioning phase has not been undertaken as this has been scoped out, with the reasoning provided above.</p>
	Trunk Road Network	<p>As regards the submitted Scoping Report, I would advise that the Welsh Government Strategic</p> <p>Road Network (SRN) team would like to be consulted regarding environmental impacts on the SRN and associated soft estate during design development and the Environmental Statement.</p> <p>It would be expected that:</p>	<p>Comment noted.</p> <p>Refer to ES Volume II, Chapter 2: Description of the Proposed Development, where potential impacts associated with access for abnormal invisible loads is considered in further detail.</p> <p>Some minor works such as vegetation management would be needed at certain locations along the delivery route, including the blade transfer area and at the Site entrance to allow safe clearance and 'oversail or overrun' of the loaded AIL transporter. Environmental constraints at each location have been assessed in the AIL route environmental review ES Volume III, Appendix 4.1: AILR Environmental Constraint Review and in relevant</p>

ID no.	Issue	Comment Raised	Applicant Response
		<p>a) potential pathways to environmental contamination of the SRN, including the soft estate and water drainage system, are anticipated and controlled appropriately.</p> <p>b) the loss of semi-natural habitats of value to biodiversity on the SRN soft estate is avoided where possible and mitigated and compensated for where impacts cannot be avoided.</p> <p>c) opportunities to provide biodiversity enhancements within and adjacent to the SRN soft estate should be perused such that there is a net benefit for biodiversity resulting from any works related to the SRN, in accordance with the Section 6 Enhanced Biodiversity Duty under the Environment (Wales) Act 2016.'</p>	ES chapters where necessary. Any additional regulatory approvals required along the delivery route will be secured separately to the DNS. A detailed route survey assessment for the final chosen turbine model will be provided post consent and will form part of a suitably worded planning condition.
<i>EIA Scoping Direction Addendum</i>	Environmental impacts on the Abnormal Load Delivery Route	It is important to assess the transportation route to the site to assess if any additional works are required to facilitate transportation such as the lopping of trees or shrubs or the damage to any other features e.g. bridges.	Noted. The RSR is appended to Appendix 11.1 and it is noted where vegetation is required to be trimmed. Further consideration of the Abnormal Indivisible Loads Access Route Constraints is provided in ES Volume II, Chapter 3: Environmental Context and Reasonable Alternatives Considered.



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Scope of the Assessment

Effects Scoped into the Assessment

- 11.2.3 This assessment focusses on the effects of construction traffic on receptors identified during the review of desk-based information and field surveys.
- 11.2.4 The following potential effects were identified at the scoping stage for consideration in this assessment:
- direct effects during construction on traffic flows in the surrounding study area;
 - direct effects upon local road users and Public Rights of Way (PRoW) users; and
 - direct effects on local residents.
- 11.2.5 The assessment scenarios used for this topic are as follows:
- Future Baseline Flows (2035 – which are estimated by applying National Road Traffic Forecast (NRTF) low growth factors to traffic flow information obtained from the Department for Transport (DfT) database; and
 - Future Baseline + Development Flows (2035) – which are estimated by applying the distributed development trips to the future baseline traffic flow information.

Effects Scoped Out of the Assessment

- 11.2.6 The following topic areas have been ‘scoped out’ of detailed assessment, as proposed in the Scoping Report (July 2024):
- Operational Phase: The traffic effects during the operational phase of the Proposed Development will be low, with up to four vehicle trips per week for maintenance purposes, far below the recognised thresholds for triggering a formal transport assessment. As such, the effects during the operational phase are scoped out of the assessment.
 - Decommissioning Phase: The traffic effects during the decommissioning phase can only be fully assessed closer to that period, 40 years on from the completion of the Proposed Development. As elements of the Proposed Development are likely to remain in-situ (such as cable trenches, some access tracks, etc.), the traffic flows associated with the decommissioning works will be lower than those associated with the construction phase. The construction phase therefore represents a worst-case assessment, and as such Decommissioning effects are considered to be less than or equal to, the predicted construction phase effects. It is, however, proposed that a commitment for a Decommissioning Traffic Management Plan is made within the DNS application to protect the future highway authorities’ interests and to ensure the safe movement of all road users at that time. This would be secured by a suitably worded planning condition.



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- 11.2.7 Following the receipt of the Scoping Direction there has been one matter of change. The study area has been increased to include the A5 between Corwen and the A483 / A5 junction south of Wrexham. This change has occurred following a review of possible destinations for waste material from the Site, that has concluded that loads may need to travel eastbound into England to access quarries where aggregate material can be processed. As a result, the section of A5 that comprises the study area has been increased to account for loads travelling east to the A483.

11.3 Methodology

- 11.3.1 This assessment has been undertaken in accordance with the following legislation, and planning policy and guidance. It should be noted that this chapter does not assess the compliance of the Proposed Development against relevant planning policy. Such an assessment is presented in the **Planning Statement**.

Legislation

- There is no specific legislation considered to be applicable to the assessment of effects on traffic and transport.

National Planning Policy

- Planning Policy Wales (Welsh Government Llywodraeth Cymru, 2024);
- Strategic Traffic Management Plan for Mid Wales Wind Farms (Welsh Government, 2024); and
- Future Wales – The National Plan 2040 (Welsh Government, 2021).

Local Planning Policy

- Anglesey and Gwynedd Joint Local Development Plan (2011-2026) (Isle of Anglesey County Council and Gwynedd Council, 2017); and
- Eryri Local Development Plan 2016–2031 (Snowdonia National Park Authority, 2019).

Guidance

- Guidelines for Environmental Impact Assessment (The Institution of Environmental Management and Assessment (IEMA), 2005);
- Guidelines for the Environmental Assessment of Road Traffic (Institute of Environmental Assessment, 1993);
- IEMA, Environmental Assessment of Traffic and Movement (IEMA, 2023) (2023);
- LA104, Environmental assessment and monitoring (Design Manual for Roads and Bridges (DMRB), 2020);
- Technical Advice Note (TAN) 18 (Welsh Assembly Government, 2007) (DMRB, 2020); and
- Welsh Transport Appraisal Guidance (Welsh Government, 2024).



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Baseline Characterisation

Extent of the Study Area

- 11.3.2 The study area comprises the public roads that are expected to experience increased traffic flows associated with the construction of the Proposed Development. The geographic scope was determined through a review of the other developments in the area, Ordnance Survey (OS) plans and an assessment of the potential origin locations of construction staff and supply locations for construction materials.
- 11.3.3 It is estimated that construction personnel will access the Site predominantly from the north via the A5 and B4501. When travelling from large settlements around Wrexham and the surrounding area, personnel will likely travel via wider road network before utilising the A5 and B4501. Alternatively, construction personnel coming from the east can access the Site from the A5 via the A494, A4212 and B4501 through the town of Bala. Personnel coming from the west would likely arrive via the A4212 at Trawsfynydd. It is possible that some construction personnel may reside in local accommodation, outside of larger local settlements during the working week, in which case the traffic effect on the wider road network will be reduced.
- 11.3.4 The likely Port of Entry (POE) used for the delivery of turbine components will be the Port of Liverpool. Loads will travel to the Site via the A5036, A59, M57, M62, M6, M56, M53, A55, A4087, A470, A4212 and B4501. Full details of the AIL route are provided later in this chapter within the Potential Construction Effects section and within **Appendix 11.1**. Should excavated waste material need to be removed from the Site, this would likely be transported eastbound, to access quarries in England where aggregate material can be processed.
- 11.3.5 Based on the above, the study area for the assessment comprises:
- A5 between the A483 / A5 junction south of Wrexham and Pentrefoelas;
 - A494 between Bala and its junction with the A5;
 - A4212 between Trawsfynydd and Bala; and
 - B4501 between its junctions with the A4212 and the A5.
- 11.3.6 The above study area differs from that proposed within the EIA Scoping Report, which considered the A5 between Corwen and Pentrefoelas. A review by Pell Frischmann of the previously proposed study area, taking account of the likely routing of construction personnel, construction materials and AILs, considers that the above is more representative of the roads likely to be used during construction activities. The justification for this is included in **Table 11.1**.
- 11.3.7 Effects associated with construction traffic generated by the Proposed Development will be most pronounced near to the Site access junction and on the final approaches to the Site. As vehicles travel away from the Proposed Development, they will disperse across the wider road network, thus diluting any potential effects. It is therefore expected that the effects relating to construction traffic are unlikely to be significant beyond the study area identified above.



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11.3.8 The study area network is presented in **ES Volume IV, Figure 11.1: Study Area.**

Desk Study

11.3.9 To inform the baseline assessment and to establish the nature of the surrounding road and pedestrian infrastructure, the following desktop reviews have been undertaken:

- review of relevant transport planning policy;
- consideration of potential origin locations of construction staff and potential supply locations for construction materials to inform extent of local area roads network to be considered in the assessment;
- consideration of potential waste material destinations to be taken offsite to inform extent of local area roads network to be considered in the assessment;
- collection of existing traffic flow information;
- review of the relevant roads hierarchy;
- review of personal injury accident (PIA) data – crashmap.co.uk (Crashmap, 2025);
- identification of sensitive locations within study area (as defined by IEMA such as settlements, schools etc.) using freely available online mapping;
- identification of any other traffic sensitive receptors in the area PRow, routes, communities, etc.) using freely available online mapping and relevant agency websites;
- review of OS plans;
- review of cumulative development information – Gwynedd Council planning portal (Gwynedd Council, 2025), Conwy County Borough Council planning portal (Conwy County Borough Council, 2025) and the Welsh Government's Development of National Significance portal (Welsh Government, 2025); and
- identification of constraints to the movement of AILs through a Route Survey including swept path assessments – OS plans, video footage and Google Streetview.

Field Study

11.3.10 The following field surveys were carried out to inform the assessment:

- The collection of traffic flows and speed data was undertaken between 14 and 20 May 2025 to establish a baseline on the local road network.
- Review of the proposed AIL access routes from the POE through to the Site access location in April 2023.

Assessment Methodology

11.3.11 This chapter assesses the following:

- the existing baseline transport conditions of the study area surrounding the Proposed Development;



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- the likely infrastructure requirements necessary to enable the Proposed Development;
- the likely effects and changes associated with the imposition of construction traffic on the local road network; and
- the measures that would be required to mitigate against any potential significant effects of the temporary construction traffic and to assess residual effects.

11.3.12 The based on above the following scenarios have been assessed:

- Future Baseline; and
- Future Baseline + Construction Traffic.

Assessment Criteria

11.3.13 Guidelines for Environmental Impact Assessment' (The Institution of Environmental Management and Assessment (IEMA), 2005) notes that the separate IEMA Guidelines should be used for characterising the environmental traffic and transport effects (offsite effects) and the assessment of significance of major new developments. Recent guidance published by the IEMA, namely 'Environmental Assessment of Traffic and Movement' (IEMA, 2023) provides an update to the previously used guidance, 'Guidelines for the Environmental Assessment of Road Traffic' (Institute of Environmental Assessment, 1993) document, that should be used to characterise the environmental traffic and transport effects (offsite effects) and the assessment of significance of major new developments. The guidelines intend to complement professional judgement and the experience of trained assessors.

11.3.14 In terms of traffic and transport impacts, the receptors are the users of the roads within the study area and the locations through which those roads pass.

Receptor Sensitivity

- 11.3.15 The IEMA Guidelines include guidance on how the sensitivity of receptors should be determined. Using that as a starting point, a classification of sensitivity for users based on the characteristics of roads and locations has been developed. This is summarised in **Table 11.2**.

Table 11.2 Receptor Value and Sensitivity

Value and Sensitivity	Description
High	<p>Users of Roads – Where the road is a minor rural road, not constructed to accommodate frequent use by HGVs. Includes roads with traffic control signals, waiting and loading.</p> <p>Users / Residents of Locations – Where a location is a large rural settlement containing a high number of community and public services and facilities.</p>
Medium	<p>Users of Roads – Where the road is a local A or B class road, capable of regular use by HGV traffic. Includes roads where there is some traffic calming or restrictions, traffic calming measures traffic management measures.</p> <p>Users / Residents of Locations – Where a location is an intermediate sized rural settlement, containing some community or public facilities and services.</p>
Low	<p>Users of Roads – Where the road is Trunk or A-class, constructed to accommodate significant HGV composition. Includes roads with little or no traffic calming or traffic management measures.</p> <p>Users / Residents of Locations – Where a location is a small rural settlement, few community or public facilities or services.</p>
Negligible	<p>Users of Roads – Where roads have no adjacent settlements. Includes new strategic trunk roads that would be little affected by additional traffic and suitable for Abnormal Loads and new strategic trunk road junctions capable of accommodating Abnormal Loads.</p> <p>Users / Residents of Locations – Where a location includes individual dwellings or scattered settlements with no facilities.</p>

- 11.3.16 It is acknowledged that there will be locations both in terms of users of roads or users / residents of locations that may not fit within one of the sensitivity classifications highlighted in **Table 11.2**. In these situations, professional judgement has been applied and justification for any changes provided.
- 11.3.17 Where a road passes through a location, users are considered subject to the highest level of sensitivity defined by either the road or location characteristics.

Magnitude of Impact

- 11.3.18 The magnitude of change has been assessed in accordance with the following rules which are outlined in the IEMA Guidelines, and are used to inform a screening



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exercise to determine which links within the study area are to be considered for detailed analysis in the assessment:

- Rule 1 – Include highway links where traffic flows will increase by more than 30% (or where the number of heavy goods vehicles (HGVs) is predicted to increase by more than 30%); and
- Rule 2 – Include any other specifically sensitive areas where total traffic flows are predicted to increase by 10% or more.

11.3.19 Examples of sensitive areas are presented in the IEMA Guidelines as hospitals, churches, schools and historical buildings. These locations are to be assessed in relation to “Rule 2”.

11.3.20 The IEMA Guidelines identify the key impacts that are most important when assessing the magnitude of traffic impacts from an individual development; the impacts and levels of magnitude are discussed below:

- Severance – the IEMA Guidance advises that, “The Department for Transport has historically set out a range of indicators for determining the significance of severance. Changes in traffic flow of 30 %, 60 % and 90 % are regarded as producing ‘slight’, ‘moderate’ and ‘substantial’ changes in severance respectively. Although these thresholds no longer appear in Department for Transport guidance, they have not been superseded by subsequent changes to guidance and are established through planning case law. However, caution needs to be observed when applying these thresholds as very low baseline flows are unlikely to experience severance impacts even with high percentage changes in traffic.” (Para 3.16). The Guidelines acknowledge that changes in traffic flows should be used cautiously, stating that “the assessment of severance should pay full regard to specific local conditions, e.g. sensitivity of adjacent land uses, prevalence of vulnerable people, whether or not crossing facilities are provided, traffic signal settings, etc.” (Para 3.17).
- Driver delay – the IEMA Guidelines note that these delays are only likely to be “significant when the traffic on the network surrounding the development is already at, or close to, the capacity of the system” (Para 3.20).
- Pedestrian delay (incorporating delay to all non-motorised users) – the IEMA Guidance advises that “pedestrian delay and severance are closely related effects and can be grouped together. Changes in the volume, composition or speed of traffic may affect the ability of people to crossroads. In general, increases in traffic levels are likely to lead to greater increases in delay. Delays will also depend on the general level of pedestrian activity, visibility and general physical conditions of the development site.” (Para 3.24). Furthermore, the guidance advises that “...it is not considered wise to set down definitive thresholds. Instead it is recommended that the competent traffic and movement expert use their judgement to determine whether pedestrian delay constitutes a significant effect.” (Para 3.26).
- Non-motorised user amenity - the IEMA Guidance advises that, “The 1993 Guidelines suggest that a tentative threshold for judging the significance of changes in pedestrian amenity would be where the traffic flow (or HGV component) is halved or doubled. Although these thresholds no longer appear in Department for Transport guidance, they have not been superseded by



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subsequent changes to guidance and are established through planning case law.” (Para 3.30).

- Fear and intimidation – there are no commonly agreed thresholds for estimating levels of fear and intimidation, from known traffic and physical conditions. However, as the impact is considered to be sensitive to traffic flow, changes in traffic flow of 30%, 60% and 90% are regarded as producing minor, moderate and substantial changes respectively in the guidelines. (Para 2.19). As such, this has been used to assess the potential impacts associated with construction activities around fear and intimidation on people in close proximity to the Proposed Development.
- Road safety – professional judgement would be used to assess the implications of local circumstances, or factors which may elevate or lessen risks of accidents. In line with the IEMA Guidance, those areas of collision clusters would be subject to detailed review.
- Road safety audits – It would be proposed to undertake any necessary Road Safety Audits (RSA) post consent and it is considered that this can be secured via a planning condition.
- Large loads – The movement of the AILs associated with the construction of the Proposed Development have been considered in full, within a separate route survey assessment (see RSR provided in **Appendix 11.1**), which identifies physical mitigation measures required to accommodate the predicted loads. Additional mitigation in terms of addressing potential impacts on sensitive receptors are included as standard within **Section 11-3511.8 ‘Additional mitigation measures’**.

11.3.21 While not specifically identified as more vulnerable road users, cyclists are considered in similar terms to pedestrians.

11.3.22 Table 3.7 of LA104 Environmental Assessment Methodology (Design Manual for Roads and Bridges (DMRB), 2020) sets out four levels against which the magnitude of these impacts should be assessed – major, moderate, minor and negligible. The impacts and levels of magnitude are discussed in **Table 11.3**.

Table 11.3 Magnitude of Impact

Magnitude	Description
High	These effects are considered to be material in the decision-making process.
Medium	These effects may be important but are not likely to be material factors in decision making. The cumulative effects of such factors may influence decision-making if they lead to an increase in the overall adverse effect on a receptor.
Low	These effects may be raised as local factors. They are unlikely to be critical in the decision-making process but are important in improving the subsequent design of the project.
Negligible	No effects or those that are imperceptible.

Nature of Effect

11.3.23 In addition to determining the significance of the effect, the assessment process also includes a qualitative description regarding the nature of the effect. These terms add additional information about how the effect would affect receptors and can be seen in **Table 11.4**.

Table 11.4 Assessment Descriptors

Term	Nature of Effect Descriptors
Adverse	An effect which has the potential to decrease receptor value or status relative to baseline conditions.
Beneficial	An effect which has the potential to increase receptor value or status relative to baseline conditions.
Short-term	Effects that persist only for a short time, e.g. during the construction (or decommissioning) phase only; includes reversible effects.
Medium-term	Effects that may persist until additional mitigation measures have been implemented and become effective.
Long-term	Effects that persist for a much longer time, e.g. for the duration of the operational phase (essentially until the development ceases or is removed/reinstated); includes effects which are permanent (irreversible) or which may decline over longer timescales.
Temporary	A reversible effect where recovery is possible and for which effects would persist only for a short or medium-term.
Frequent	Refers to a recurring effect that occurs repeatedly; in some cases a lower level of impact may occur with sufficient frequency to reduce the ability of a receptor to recover effectively.

Determination of Significance

11.3.24 The approach to determine the significance of effects has been as follows:

- identify the relevant receptors;
- derive their value (sensitivity) based on the criteria set out in **Table 11.2**;
- Identify and consider the likely impacts from each activity as set out in **Paragraph 11.3.20**;
- determine the magnitude of impact (change) based on the criteria identified in **Paragraph 11.3.22**;
- assess the significance of any effects and where likely significant effects are identified, develop secondary mitigation measures to reduce effects such that they are no longer significant; and
- assess the significance of any residual effects following the implementation of secondary mitigation measures.

Significance Criteria

- 11.3.25 To determine the overall significance of effects, the results from the receptor sensitivity and magnitude of impact (change) assessments are correlated and classified using a scale set out in DMRB LA 104 Environmental Assessment and Monitoring (Revision 1) Table 3.8.1 (DMRB, 2020) and summarised in **Table 11.5**.

Table 11.5 Significance Criteria

Receptor Sensitivity	Magnitude of Impact			
	High	Medium	Low	Negligible
High	Major	Major	Moderate	Minor
Medium	Major	Moderate	Minor	Negligible
Low	Moderate	Minor	Negligible	Negligible
Negligible	Minor	Negligible	Negligible	Negligible

- 11.3.26 Significance is categorised as major, moderate, minor or negligible. Effects judged to be of major or moderate significance are considered to be significant and require mitigation.
- 11.3.27 Where an effect could be one of major / moderate or moderate / minor significance, professional judgement is used to determine which option should be applicable. Effects judged to be of minor or negligible significance are considered not significant.

11.4 Baseline Conditions

Active Travel Network

- 11.4.1 There are limited pedestrian facilities in the immediate vicinity of the Site, reflecting the rural nature of the location. Those areas where pedestrian facilities are located are detailed below:
- At the junction of the B4501 and A4212, immediately south of Frongoch, there is a footway located on the western edge of the carriageway leading into the village.
 - A lit footway is provided on the western side of the carriageway of the A4212 through Frongoch.
 - Lit footways are provided on both sides of the A4212 through Bala. A signalised pedestrian crossing is also provided across the A4212 in the vicinity of the Derek Williams Theatre.
 - A footway is present alongside the A494 for a distance of approximately 900 m linking Llanfor with Bala to the south.



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- The level of pedestrian infrastructure is commensurate with the scale of the local settlements and their rural setting.

- 11.4.2 A full review of the existing pedestrian facilities is included in **Appendix 11.1**.
- 11.4.3 A review of the Gwynedd Council's PRow plan (Gwynedd County Council, 2025) identifies a number of PRowS located within, and in the vicinity of, the Site. A full list of applicable PRow is included in Table 2 within **Appendix 11.1**, while the location of the paths can be seen in Figure 9 of **Appendix 11.1**.
- 11.4.4 A review of the Common Land (CROW Act) Fully Attributed Dataset indicates that there are areas of Common Land and Open Access Land within and adjacent to the Site boundary. The Site boundary in relation to areas of Common Land and Open Access Land are shown in Figure 10 and Figure 11 within **Appendix 11.1**, respectively.
- 11.4.5 A review of the Sustrans National Cycle Network (NCN) map (Sustrans, 2025) indicates that there are no NCN Routes within the immediate vicinity of the Proposed Development. The closest NCN Route to the Proposed Development is NCN Route 82 which runs to the west of the study area within Trawsfynydd. NCR Route 82 is approximately 210 km in length and runs in sections from Bangor to Fishguard. This is segregated from the A4212 and the study area and therefore unaffected by the Proposed Development.

Road Access

- 11.4.6 The Proposed Development will be accessed by an upgraded simple priority junction off the B4501 at Glan-yr-afon. The access junction will provide access to the Site for all AILs associated with the turbine deliveries, as well as access for HGVs delivering construction materials and general Site traffic. An indicative Site access junction is provided as **ES Volume IV, Figure 2.7: Indicative Site Entrance Arrangement Plan** and **ES Volume IV, Figure 2.8: Indicative Site Entrance and Junction Visibility Splay**.
- 11.4.7 The A5 Trunk Road extends approximately 391 km from London in the south-east to Holyhead in the north-west. Within the study area, the A5 is predominantly subject to the national speed limit, reducing to 20 miles per hour (mph) in built-up areas. However, some sections, such as the approaches to Glyndyfrdwy, retain a 30 mph limit. The A5 is maintained by the North and Mid Wales Trunk Road Agent (NMWTRA) and appears to be in a generally good condition.
- 11.4.8 The A494 Trunk Road runs between the M56 motorway (near Mollington and Capenhurst) and the A470 at Dolgellau, Gwynedd. As with the A5, the A494 is generally subject to the national speed limit, with a reduction to 20 mph through built-up areas. Certain locations, including Gwyddelwern, retain a 30 mph limit. The A494 is also maintained by NMWTRA and appears to be in good condition.
- 11.4.9 The A4212 is a single carriageway road traversing Eryri National Park, linking Bala with Trawsfynydd along the Afon Tryweryn corridor. Within Bala, Ffrydan Road



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(A4212) was formerly subject to a 30 mph limit, which has been reduced to 20 mph. Northbound from Bala, the limit increases to the national speed limit before reducing to 40 mph near the junction with the B4501. The A4212 is maintained by Gwynedd Council and appears to be in a generally reasonable condition throughout.

- 11.4.10 The B4501 is a single carriageway road connecting Frongoch, located to the south-west of the Proposed Development, with the A5 to the north. In the vicinity of the Proposed Development, the road is subject to the national speed limit, reducing to 40 mph to the south approaching the A4212 junction at Frongoch. The road is unlit throughout. The section between Frongoch and Rhyd-Ddu is maintained by Gwynedd Council, beyond which responsibility transfers to Conwy County Council. The road appears to be in a generally reasonable condition throughout.

Baseline Traffic Conditions

- 11.4.11 In order to assess the impact of construction traffic on the study area, an Automatic Traffic Counter (ATC) was deployed on the B4501 between 14 May 2025 and 20 May 2025 at the following location:
1. B4501 at Glan-yr-afon (Site Access).
- 11.4.12 The ATC collected vehicle volumes, composition and speed per direction per hour for the seven day period.
- 11.4.13 To compliment the ATC survey information, Annual Average Daily Traffic (AADT) flows were obtained from the UK Department for Transport (DfT) traffic database (Department for Transport, 2025). Available 2024 flow information was obtained for all DfT count point locations.
- 11.4.14 DfT traffic data has been used for the following locations:
2. A5 between Pentrefoelas and B4501 (Count Site reference: 50507);
 3. A4212 between Capel Cerwyn and B4391 (Count Site reference: 644);
 4. A4212 between B4392 and Trawsfynydd (Count Site reference: 30666);
 5. A5 east of Ty-nant (Count Site reference: 30509);
 6. A494 north west of Glan-yr-afon (Count Site reference: 73352);
 7. A494 north west of Bethel (Count Site reference: 557);
 8. A5 west of Tyn-y-cefn (Count Site reference: 10509);
 9. A5 at Llidiart-y-Parc (Count Site reference: 40509);
 10. A5 west of Berwyn (Count Site reference: 20510);
 11. A5 east of Llangollen (Count Site reference: 508); and
 12. A5 east of Canal Side (Count Site reference: 99572).
- 11.4.15 The traffic counters allowed the traffic flows to be split into vehicle classes and the data has been summarised into cars / light good vehicles (LGVs) and HGVs (all goods vehicles >3.5 tonnes gross maximum weight).



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- 11.4.16 A National Road Traffic Forecast (NRTF) Low Growth factor was applied to the 2024 DfT survey data to bring the traffic data up to the base year of 2025. The NRTF Low Growth factor for 2024 to 2025 is 1.005.
- 11.4.17 A summary of the results for the average daily 24-hour period is provided in **Table 11.6**, while the locations of the traffic counts can be seen in **ES Volume IV, Figure 11.2: Traffic Count Locations**.

Table 11.6 24-hour Average Traffic Data (2025)

No	Survey	Car & LGV	HGV	Total
1	B4501 at Glan-yr-afon (Site Access)	1,412	190	1,602
2	A5 between Pentrefoelas and B4501	2,743	130	2,873
3	A4212 between Capel Cerwyn and B4391	2,471	115	2,586
4	A4212 between B4392 and Trawsfynydd	1,783	92	1,875
5	A5 east of Ty-nant	2,860	230	3,090
6	A494 north-west of Glan-yr-afon	4,359	217	4,576
7	A494 north-west of Bethel	4,359	217	4,576
8	A5 west of Tyn-y-cefn	7,817	477	8,294
9	A5 at Llidiart-y-Parc	3,258	385	3,643
10	A5 west of Berwyn	4,304	396	4,700
11	A5 east of Llangollen	4,966	330	5,296
12	A5 east of Canal Side	8,966	381	9,347

Note that variances may occur due to rounding

- 11.4.18 The ATC survey on the B4501 was also used to obtain speed statistics (DfT counts do not provide speed data). The seven-day average and 85th percentile speeds per direction observed at the count site in the vicinity of the Site access is summarised in Table 4 in **Appendix 11.1**.
- 11.4.19 The speed survey data indicates that on the B4501, in the vicinity of the proposed Site access junction, the 60 mph posted speed limit is being adhered to.

Personal Injury Accident Review

- 11.4.20 PIA data for the five-year period covering 01 January 2019 through to the 31 December 2023 was obtained from the online resource CrashMap (Crashmap, 2025) which uses data collected by the Police about road traffic crashes occurring on Welsh roads, where someone is injured.
- 11.4.21 Transport Assessment (TA) Guidance (Department for Transport (DfT), 2014) requires an analysis of the PIA on the road network in the vicinity of any development to be undertaken for at least the most recent 3-year period, or preferably a 5-year period, particularly if the Site has been identified as being within a high accident area. Whilst the study area has not been identified as having a high



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accident rate, a five-year review has been carried out to ensure a comprehensive assessment has been undertaken.

11.4.22 For the purposes of the PIA review, the following road links have been assessed:

- A5 between Corwen and A494;
- A5 between A494 and B4501;
- A5 between B4501 and Pentrefoelas;
- A494 between A5 and Bala;
- A4212 between A494 and B4501;
- A4212 between B4501 and Trawsfynydd;
- B4501 between A4212 and Glan-yr-afon; and
- B4501 between A5 and Glan-yr-afon.

11.4.23 The above road sections are considered to be those which will be subject to the highest levels of construction vehicle activity.

11.4.24 The PIA statistics are categorised into three categories, namely:

- a “Slight” PIA, examples include a sprain, bruise or cut which is not considered to be severe, or slight shock requiring roadside attention;
- a “Serious” PIA, examples include fractures, concussion, internal injuries, crushings, severe cuts and lacerations, severe general shock requiring treatment; and
- a “Fatal” PIA, for those accidents that result in a death.

11.4.25 The general locations and severity of the recorded accidents within the study area are summarised in **Table 11.7**, while **ES Volume IV, Figure 11.3: Personal Injury Accident Plan** shows their general locations.

Table 11.7 Personal Injury Accident Summary

Survey	Slight	Serious	Fatal	HGV Incidents
A5 between Corwen and A494	2	3	0	1
A5 between A494 and B4501	3	0	0	0
A5 between B4501 and Pentrefoelas	3	3	1	1
A494 between A5 and Bala	15	8	1	3
A4212 between A494 and B4501	4	1	0	1
A4212 between B4501 and Trawsfynydd	6	6	0	2



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Survey	Slight	Serious	Fatal	HGV Incidents
B4501 between A4212 and Glan-yr-afon	1	0	0	0
B4501 between A5 and Glan-yr-afon	5	1		1
Total	39	22	2	8
Percentage of Total Accidents	62%	35%	3%	-

11.4.26 A summary analysis of the incidents indicates that:

- A total of 63 accidents were recorded within the reviewed road sections within the last five-year period.
- Of those 63 accidents, 39 were categorised as “slight”, 22 were categorised as “serious”, and there were 2 fatalities.

A5 between Corwen and A494

- A total of five accidents occurred in this location, two were classified as “slight” and three as “serious”.
- One accident involved a pedestrian and an HGV within the village of Corwen. This was classified as “slight”.
- Three serious accidents involved motorcycles, two occurring at the junction with the A494.
- Of the five accidents, three occurred at junctions and all involved young drivers (under 25).

A5 between A494 and B4501

- A total of three accidents occurred on this section of the A5, all of which were classified as “slight” in severity.
- Two of the accidents involved motorcycles, with one of these also involving a young driver (under 25).
- One “slight” accident occurred at the junction with the B4501.

A5 between B4501 and Pentrefoelas

- A total of seven accidents occurred on the A5 between the B4501 and Pentrefoelas. Three PIAs were classified as “slight” in severity, three were “serious” and one resulted in a fatality.
- The PIA resulting in a fatality occurred near the village of Pentrefoelas and involved an HGV and motorcycle colliding with other vehicles on the road.

A494 between A5 and Bala

- A total of 24 accidents occurred at this location, 15 were classified as “slight” and 8 as “serious”. One accident resulted in a fatality.



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- One accident involved a pedestrian. This was classed as “serious” and occurred in the vicinity of Llanfor, near the junction into the town.
- One accident involved an HGV, which also involved a car and motorcycle, and was classed as “serious”.
- A total of six accidents involved motorcycles, five were classed as “serious”, and one resulted in a fatality. The fatal accident involved a motorcycle colliding with another vehicle.
- Six accidents involved young drivers (under 25), four were “serious” and two “slight”.
- Of the 23 accidents recorded, 14 occurred either on a bend or approach to a bend on the carriageway, with the remaining accidents generally occurring in the vicinity of junctions / accesses.
- Four accidents occurred in Bala, around the junction with the A4212, where three “slight” and one “serious” accident occurred on the A494 at, or east of the junction with the A4212.

A4212 between A494 and B4501

- A total of five accidents occurred at this location, four were classified as “slight” and one as “serious”.
- One accident involved a pedestrian, north of the junction with the A494, outside the Derek Williams Theatre.
- One accident involved an HGV and two other vehicles, including a motorcycle and was “serious” in severity.
- One accident, which was “slight” in severity, occurred at the junction with the A4212.

A4212 between B4501 and Trawsfynydd

- A total of twelve accidents occurred on this section of the A4212, six were classified as “slight” and six as “serious”.
- HGVs were involved in two of the accidents, one “serious” and one “slight”. The “serious” accident occurred to the north of the junction with the B450 where an HGV collided with a motorcycle.
- One “slight” accident involved a young driver, two “serious” accidents involved motorcycles, including the accident previously mentioned.

B4501 between A4212 and Glan-yr-afon

- One accident occurred on the B4501 between Glan-yr-afon and the A4212. This accident was “slight” in severity and occurred in the vicinity of the proposed Site Access. The accident was a single vehicle accident involving a car.

B4501 between A5 and Glan-yr-afon

- A total of six accidents occurred on this section of the B4501, five were classified as “slight” and one as “serious”.
- One “slight” accident occurred at the bends north of the proposed Site Access.



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- The “serious” accident occurred west of Gellioedd and involved a young driver (under 25). Three other “slight” accidents also involved young drivers (under 25).
- One “slight” accident involved an HGV colliding with another vehicle.

11.4.27 The analysis indicates that there were a total of 63 PIAs recorded along the assessed links within the most recent five-year period. Most recorded accidents were categorised as being “slight” (62%), with 35% of incidents recorded as “serious” and two resulting in a fatality (3%).

11.4.28 Most accidents occurred on a bend or on approach to a junction, where there is an increased interaction between vehicles.

11.4.29 As there have been two recorded accidents on approach to the proposed Site access junction, this will be recognised within a Construction Traffic Management Plan (CTMP) to be secured by planning condition. The CTMP will detail site signage, which will be installed close to the Site access advising road users of ongoing construction activity, thus increasing awareness and attention.

Sensitive Receptors

11.4.30 **Table 11.8** sets out the receptors scoped in as relevant to this assessment and their assigned sensitivity. The location of these receptors is illustrated on **ES Volume IV, Figure 11.1**.

Table 11.8 Sensitive Receptors

Receptor	Description	Sensitivity
B4501 Users	Where the road is a local A or B class road, capable of regular use by HGV traffic.	Medium
A4212 Users	Where the road is a local A or B class road, capable of regular use by HGV traffic.	Medium
A5 Users	Where the road is Trunk or A-class, constructed to accommodate significant HGV composition.	Low
A494 Users	Where the road is Trunk or A-class, constructed to accommodate significant HGV composition.	Low
Residents along the B4501	Where a location includes individual dwellings or scattered settlements with no facilities.	Negligible
Residents along the A4212	Where a location includes individual dwellings or scattered settlements with no facilities.	Negligible

Receptor	Description	Sensitivity
Residents along the A5	Where a location includes individual dwellings or scattered settlements with no facilities.	Negligible
Residents along the A494	Where a location includes individual dwellings or scattered settlements with no facilities.	Negligible
Bala Residents	Where a location is an intermediate sized rural settlement, containing some community or public facilities and services.	Medium
Frongoch Residents	Where a location is a small rural settlement, few community or public facilities or services.	Low
Corwen Residents	Where a location is an intermediate sized rural settlement, containing some community or public facilities and services.	Medium
Llidiart-y-Parc	Where a location is a small rural settlement, few community or public facilities or services.	Low
Glyndyfrdwy Residents	Where a location includes individual dwellings or scattered settlements with no facilities.	Negligible
Llangollen residents	Where a location is an intermediate sized rural settlement, containing some community or public facilities and services.	Medium
Canal Side residents	Where a location is a small rural settlement, few community or public facilities or services.	Low
Cerrigydrudion residents	Where a location is an intermediate sized rural settlement, containing some community or public facilities and services.	Medium
Pentrefoelas residents	Where a location is a small rural settlement, few community or public facilities or services.	Low
PRoW / Path / Common Land / Open Access Land Users within the Site	Minor paths used by walkers and cyclists, not constructed to accommodate HGV traffic flows / Land used by walkers and for grazing, not constructed to accommodate HGV traffic flows	High

11.4.31 As previously noted in the Magnitude of Impact section, examples of sensitive areas are presented in the IEMA Guidelines as locations which include hospitals,



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churches, schools, historical buildings. Based on these indicators which are stated within the IEMA Guidelines, the following locations within the study area have been identified as sensitive areas in this assessment:

- Bala;
- Frongoch;
- Corwen;
- Glyndyfrdwy;
- Llangollen;
- Canal Side;
- Cerrigydrudion; and
- Pentrefoelas.

11.4.32 As the above locations have been identified as sensitive areas, these locations are therefore subject to 'Rule 2' of the IEMA Guidelines which requires a full assessment of effects if the locations are subject to an increase in 10% of traffic.

11.4.33 All other locations within the study area are subject to 'Rule 1' and are assessed if traffic flows (or HGV flows) on road links increase by more than 30%.

Future Baseline in the Absence of the Proposed Development

11.4.34 Construction of the Proposed Development, if consent is granted and is anticipated to take approximately 21 months.

11.4.35 To assess the likely effects during construction, base year traffic flows were determined by applying a NRTF low growth factor to the surveyed traffic flows. The NRTF low growth factor for 2025 to 2035 is 1.06. This growth factor has been applied to the survey data to estimate the base traffic flows, as shown in **Table 11.9**. This will be used in the Construction Peak Traffic Impact Assessment.

Table 11.9 24-hour Average Traffic Data (Future Baseline)

No	Survey	Car & LGV	HGV	Total
1	B4501 at Glan-yr-afon (Site Access)	1,497	202	1,699
2	A5 between Pentrefoelas and B4501	2,908	138	3,045
3	A4212 between Capel Cerwyn and B4391	2,619	122	2,741
4	A4212 between B4392 and Trawsfynydd	1,890	98	1,988
5	A5 east of Ty-nant	3,032	244	3,275
6	A494 north-west of Glan-yr-afon	4,621	230	4,851
7	A494 north-west of Bethel	4,621	230	4,851
8	A5 west of Tyn-y-cefn	8,286	506	8,792
9	A5 at Llidiart-y-Parc	3,453	408	3,862
10	A5 west of Berwyn	4,562	420	4,982

No	Survey	Car & LGV	HGV	Total
11	A5 east of Llangollen	5,264	350	5,614
12	A5 east of Canal Side	9,504	404	9,908

Note that variances may occur due to rounding

11.4.36 If the Proposed Development did not proceed or proceeded later than currently predicted, traffic growth will occur and the public roads within the study area will experience increased traffic flows resulting from other development pressures, tourism traffic and population growth. Accordingly, the assessment represents a worst case as the contribution of the Proposed Development in relative terms would decrease in the future.

11.5 Mitigation Embedded into the Design

11.5.1 This assessment has been based on the principle that measures have been 'embedded' into the design of the Proposed Development to remove potential significant effects as far as practicable, for example by the considered placement of infrastructure. **ES Volume II, Chapter 3: Description of the Proposed Development**, identifies the design mitigation that has been embedded into the design of the Proposed Development. The embedded mitigation relevant to this assessment is detailed in **Table 11.10**.

Table 11.10 Embedded Mitigation

Embedded Mitigation Measure Relevant to Traffic and Transport	Function
The Site layout includes the use of one onsite borrow pit to provide material for the creation of sections of access track and the construction compound area.	To reduce the volume of aggregate material transported to the Site.
Material won from the cut / fill exercise onsite will be used for creation of the tracks and hardstanding's bases.	To reduce the volume of aggregate material transported to / from the Site
Batching of concrete for use onsite is considered feasible and economic and facilities to enable this are being provided at the Proposed Development.	To reduce the requirement for ready-mix concrete to be delivered to the Site. The assessment, has, however, taken into consideration the importation of concrete batching materials, including water and aggregates.

11.6 Assessment of Likely Effects (Without Additional Mitigation)

Construction

11.6.1 The assessment is based upon the construction effects that may occur within the study area during the 21-month construction programme. To assess the effects, it



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is necessary to determine the likely traffic generation associated with the Proposed Development during the peak construction month.

- 11.6.2 During the 21-month construction period, the following traffic will require access to the Site:
- staff transport, in either cars or staff minibuses;
 - construction equipment and materials, deliveries of machinery and supplies such as concrete materials and crushed rock;
 - removal of excess waste material from the Site;
 - components relating to the substation, BESS and associated infrastructure;
 - AILs consisting of the wind turbine sections and heavy lift cranes; and
 - escort vehicles for AIL deliveries.
- 11.6.3 Average monthly traffic flow data was used to establish the construction trips associated with the Proposed Development, based on the assumptions detailed in the following sections. It should be noted that there may be variations in the following calculations due to rounding, which are not considered significant.
- 11.6.4 Except for the turbine components, most traffic will be HGVs and normal construction plant, including grading tractors, excavators, high-capacity cranes, forklifts and dumper trucks. Most will arrive at the Site access junction on low loaders.
- 11.6.5 The turbines are delivered in component sections for transport and will be assembled within the turbine array. The nacelle, hub, drive train, blade, tower sections are classified as AILs due to their weight and/or length, width and height when loaded. The components can be delivered on a variety of transport platforms with typical examples illustrated in **Appendix 11.1**.
- 11.6.6 In addition to the turbine deliveries, up to two high-capacity erection cranes will be needed to offload components and erect the turbines. The cranes are likely to be mobile cranes with a capacity up to 1,000 tonnes that will be escorted by boom and ballast trucks to allow full mobilisation onsite. A smaller erector / assist crane will also be present to allow the assembly of the main cranes and to ease overall erection of the turbines.
- 11.6.7 The resulting traffic generation profile is presented in **Appendix 11.1**. The peak of construction activity is expected to occur in month eight when there will be a total of 2,518 vehicle movements, which equates to 114 vehicle movements per day, comprising 62 two-way HGV movements and 52 two-way car / LGV movements.
- 11.6.8 This would equate to approximately 11 two-way total vehicles movements or six two-way HGV movements per hour, across a typical 10-hour day, assuming a flat traffic profile i.e. vehicles distributed evenly across the day.
- 11.6.9 The distribution of development traffic on the network will vary depending on the types of loads being transported, however the vast majority of materials will route to



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the Site access junction from the north via the A5 and B4501. The assumptions for the distribution of construction traffic during the peak months are presented in **Appendix 11.1**.

11.6.10 The most appropriate POE for the Site is the port of Liverpool, which has been used for AIL deliveries to a number of wind farms and has suitable marine access and storage availability. The port is considered to be the closest suitable port to the Site and as such is in line with the Government's "Water Preferred" policy towards AIL movements.

11.6.11 For the purposes of preparing this chapter and **Appendix 11.1** it has been assumed that all AIL traffic will access from the Proposed Development Site via the following route:

- loads would exit Port of Liverpool heading south and taking the first exit at the roundabout onto the A5036 eastbound before merging onto the A59 northbound;
- loads would turn right at Switch Island Junction to join the M57 heading south-east;
- loads would exit the M57 at Junction 1 to join the M62 eastbound;
- loads would exit the M62 at Junction 10 to join the M6 southbound;
- loads would exit the M6 at Junction 20A to join the M56 westbound;
- loads would exit the M56 at Junction 15 to join the M53 southbound before merging onto the A55 southbound;
- loads would exit the A55 at Junction 34 to continue on the A55 westbound;
- loads would exit the A55 at Junction 10 to join the A4087 westbound at Caernarfon Rd Interchange;
- at the roundabout, loads would take the 1st exit onto A487 Y Felinheli Bypass;
- loads would continue on the A487 before merging onto the A470 southbound;
- at Trawsfynydd, loads would turn left onto the A4212 eastbound;
- at Fron-goch, loads would turn left onto the B4501 northbound; and
- loads would enter the Site access junction to the south of Glen-yr-afon.

11.6.12 The above AIL component delivery route is shown in **ES Volume IV, Figure 11.4: Abnormal Indivisible Loads Route**.

11.6.13 Following the distribution and assignment of traffic flows to the study area network, the resultant daily traffic during the peak of construction in month eight, is summarised in **Table 11.11**.

Table 11.11 Peak Construction Traffic

No	Survey	Car & LGV	HGV	Total
1	B4501 at Glan-yr-afon (Site Access)	52	62	114
2	A5 between Pentrefoelas and B4501	-	-	-



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No	Survey	Car & LGV	HGV	Total
3	A4212 between Capel Cerwyn and B4391	-	-	-
4	A4212 between B4392 and Trawsfynydd	-	-	-
5	A5 east of Ty-nant	26	62	88
6	A494 north-west of Glan-yr-afon	26	0	26
7	A494 north-west of Bethel	26	0	26
8	A5 west of Tyn-y-cefn	52	62	114
9	A5 at Llidiart-y-Parc	52	10	62
10	A5 west of Berwyn	52	10	62
11	A5 east of Llangollen	52	10	62
12	A5 east of Canal Side	52	10	62

Note that variances may occur due to rounding

11.6.14 Note, where road links show no construction traffic, this is due to those road links not being used during the peak month of construction activity.

11.6.15 The construction traffic was compared against the future baseline traffic to estimate the increase in traffic associated with this phase of the Proposed Development. **Table 11.12** illustrates the potential traffic impact at the peak of construction activity during month eight.

Table 11.12 Future Baseline + Construction Traffic Impact Summary

No	Survey	Cars & LGV	HGV	Total Traffic	Cars & LGV % Increase	HGV % Increase	Total % Increase
1	B4501 at Glan-yr-afon (Site Access)	1,549	264	1,813	3%	31%	7%
2	A5 between Pentrefoelas and B4501	2,908	138	3,045	0%	0%	0%
3	A4212 between Capel Cerwyn and B4391	2,619	122	2,741	0%	0%	0%
4	A4212 between B4392 and Trawsfynydd	1,890	98	1,988	0%	0%	0%
5	A5 east of Ty-nant	3,058	306	3,363	1%	25%	3%
6	A494 north-west of Glan-yr-afon	4,647	230	4,877	1%	0%	1%



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No	Survey	Cars & LGV	HGV	Total Traffic	Cars & LGV % Increase	HGV % Increase	Total % Increase
7	A494 north-west of Bethel	4,647	230	4,877	1%	0%	1%
8	A5 west of Tyn-y-cefn	8,338	568	8,906	1%	12%	1%
9	A5 at Llidiart-y-Parc	3,505	419	3,924	2%	3%	2%
10	A5 west of Berwyn	4,614	430	5,044	1%	2%	1%
11	A5 east of Llangollen	5,316	360	5,676	1%	3%	1%
12	A5 east of Canal Side	9,556	414	9,970	1%	3%	1%

Note that variances may occur due to rounding

- 11.6.16 The total traffic movements are predicted to increase by a maximum of 7% on the B4501 at the Site access junction. This section of road will be used by all construction traffic accessing the Site. Aside from the B4501, the next highest total traffic increase is 3% which occurs on the A5 east of Ty-nant, between the A494 and the B4501.
- 11.6.17 The highest and second highest HGV traffic movements increase will occur on the B4501 in the vicinity of the Site access junctions and on the A5 east of Ty-nant, where HGV traffic is estimated to increase by 31% and 25%, respectively. This is primarily due to the HGV traffic associated with the import of aggregate material and the removal of waste material from the Site. To put these increases into perspective, both locations will see an additional 62 two-way HGV movements per day, or approximately six two-way HGV movements per hour, across a typical 10-hour day on Site. This is not considered significant in terms of overall traffic flows.
- 11.6.18 It should be noted that the construction phase is temporary in nature and the peak of construction activities is short lived, occurring over a relatively short timeframe when taking account of the whole construction program.
- 11.6.19 A review of existing theoretical road capacity has been undertaken using The NESAs Manual, formerly part of the Design Manual for Roads and Bridges, Volume 15, Part 5. The theoretical road capacity has been estimated for each of the road links for a 10-hour period that makes up the study area. The results are summarised in **Table 11.13**.

Table 11.13 Future Baseline + Construction Traffic Impact Summary

No	Survey	Future Baseline Flow	Future Baseline + Development Flows	Theoretical Road Capacity (10hr)	Spare Road Capacity (%)
1	B4501 at Glan-yr-afon (Site Access)	1,699	1,813	16,000	89%
2	A5 between Pentrefoelas and B4501	3,045	3,045	24,000	87%
3	A4212 between Capel Cerwyn and B4391	2,741	2,741	24,000	89%
4	A4212 between B4392 and Trawsfynydd	1,988	1,988	24,000	92%
5	A5 east of Ty-nant	3,275	3,363	24,000	86%
6	A494 north-west of Glan-yr-afon	4,851	4,877	24,000	80%
7	A494 north-west of Bethel	4,851	4,877	24,000	80%
8	A5 west of Tyn-y-cefn	8,792	8,906	24,000	63%
9	A5 at Llidiart-y-Parc	3,862	3,924	24,000	84%
10	A5 west of Berwyn	4,982	5,044	24,000	79%
11	A5 east of Llangollen	5,614	5,676	24,000	76%
12	A5 east of Canal Side	9,908	9,970	24,000	58%

Note that variances may occur due to rounding

11.7.1 The results indicate there are no road capacity issues with the addition of construction traffic associated with the Proposed Development and significant spare capacity exists within the trunk and local road network to accommodate all construction phase traffic.

11.7.2 In accordance with the IEMA Guidelines Rules 1 and 2, detailed assessments have been undertaken on the following receptors:

- B4501 Users (Medium sensitivity);
- Residents on the B4501 (Negligible sensitivity); and
- PRow / Path / Common Land / Open Access Land Users within the Site (High sensitivity).



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- 11.7.3 For the purposes of undertaking the assessment, where both the users of a road and residents in the vicinity of the road require to be assessed, these have been done together to avoid repetition and have been assessed based on the higher level of sensitivity.
- 11.7.4 With regards to PRow / Path / Common Land / Open Access Land Users within the Site, this relates to those paths and locations specifically impacted by the construction of the Proposed Development, for example where sections of the path are shared with onsite access tracks, where onsite paths are crossed by the proposed access tracks, or where other onsite infrastructure could impact people using paths. For the purposes of the assessment, the following PRow / Paths, as identified within Annex 3 of **ES Volume III, Appendix 11.1**, have been included within the assessment:
- Gwynedd Council PRowS
 - Llandderfel No 175, footpath;
 - Llandderfel No 176, footpath;
 - Llandderfel No 177, footpath;
 - Llandderfel No 182, footpath; and
 - Llandderfel No 120, footpath.
- 11.7.5 The significance of the potential effects on the above receptors in the absence of any mitigation measures has been determined using the rules and thresholds previously outlined in the section covering the Magnitude of Impact. **Table 11.14** summarises the potential unmitigated significance of the effect on the receptors for the construction phase.

Table 11.14 Construction Phase Effects Summary (Pre-Mitigation)

Receptor	Potential Impact	Magnitude of Impact (Pre-mitigation)	Significance of Effect (Pre-mitigation)	Comment
B4501 Users / Residents	Severance	Low	Minor adverse (Not Significant)	The maximum increase in HGV traffic is anticipated to be 31 %. To put this increase into perspective, both locations will see an additional 62 two-way HGV movements per day, or approximately six two-way HGV movements per hour, across a typical 10-hour day on Site. This is not considered significant in terms of overall traffic flows. The effect of severance is therefore considered to be minor.
	Driver Delay	Low	Minor adverse (Not Significant)	There is ample spare capacity along the B4501, therefore the effect on driver delay is considered minor.
	Pedestrian Delay	Low	Minor adverse (Not Significant)	There are limited pedestrian facilities located along the B4501 within the study area, therefore the effect on pedestrian delay is considered minor.
	Non-motorised User Amenity	Low	Minor adverse (Not Significant)	There are limited pedestrian facilities located along the B4501 within the study area, therefore the effect on non-motorised user amenity is considered minor.
	Fear & Intimidation	Low	Minor adverse (Not Significant)	The maximum increase in HGV traffic is anticipated to be 31 %. To put this increase into perspective, both locations will see an additional 62 two-way HGV movements per day, or approximately six two-way HGV movements per hour, across a typical 10-hour day on Site. This is not considered significant in terms of overall traffic flows.

Receptor	Potential Impact	Magnitude of Impact (Pre-mitigation)	Significance of Effect (Pre-mitigation)	Comment
				The effect of fear and intimidation is therefore considered to be minor.
	Road Safety	Low	Minor adverse (Not Significant)	A total of six accidents occurred on the B4501 over the most recent recorded five-year period. None of these resulted in a fatality. The character of the road could lead to driver frustration however, and as such, cognisance of HGV traffic movements will be included within the proposed mitigation measures. Therefore, the effect of road safety is considered minor.
	Large Loads	High	Moderate adverse (Significant)	It is anticipated that the Proposed Development will require 37 AIL convoys to be delivered to Site over a five month period. These loads will be delivered in convoys of three AILs per convoy and will be accompanied by three escort vehicles. The effect is therefore considered moderate.
PRoW / Path / Common Land / Open Access Land Users within the Site	Severance	High	Major adverse (Significant)	The presence of construction traffic associated with the Proposed Development, however over a prolonged period of time within the Site where there was previously minimal traffic could lead to severance of the path network. The effect, without additional mitigation, is therefore considered to be major.
	Driver Delay	N/A	N/A	N/A
	Pedestrian Delay	High	Major adverse (Significant)	Pedestrians could experience delays if their movements interact with construction traffic along the path network which would not be experienced prior to the construction period.



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Receptor	Potential Impact	Magnitude of Impact (Pre-mitigation)	Significance of Effect (Pre-mitigation)	Comment
				The effect is therefore considered major / moderate (adverse).
	Non-motorised User Amenity	High	Major adverse (Significant)	The presence of traffic flows for a prolonged period of time along a location where there would have been minimal or no traffic prior to the construction phase could affect the amenity of the path network for users. The effect is therefore considered major (adverse).
	Fear & Intimidation	High	Major adverse (Significant)	The presence of traffic flows for a prolonged period of time along a location, where there would have been no traffic prior to the construction phase could cause fear and intimidation of the path network for users. The effect is therefore considered major (adverse).
	Road Safety	High	Major adverse (Significant)	There is potential to impact the safety of the path users interacting with construction delivery vehicles. The impact is therefore considered major / moderate (adverse).
	Large Loads	High	Major adverse (Significant)	There is potential to impact the safety of the path users interacting with AIL delivery vehicles. The effect is therefore considered major (adverse).



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11.7.6 The assessment of significance suggests that the following receptors are considered likely to experience significant effects, prior to the application of mitigation measures:

- B4501 Users / Residents, and
- PRoW / Path / Common Land / Open Access Land Users within the Site.

11.7.7 It should be noted that the impacts relate solely to the peak of construction activities or when AILs are transported to the Site, and that the construction period is short lived and the effects are temporary in nature.

11.8 Additional Mitigation Measures

11.8.1 **Table 11.15** sets out the additional mitigation measures required to mitigate the likely effects identified in **Section 11.6**.

Table 11.15 Additional Mitigation

Phase	Description of Additional Mitigation Measure	Securing Mechanism
Construction	Production of a CTMP.	Responsibility: Principal Contractor Mechanism: Planning Condition
Construction	Offsite Mitigation – Road Condition Survey	Responsibility: Principal Contractor Mechanism: Planning Condition
Construction	Abnormal Load TMP	Responsibility Abnormal Load supplier. Mechanism: Planning Condition
Construction	Onsite Measures delivered using an Access Management Plan (AMP)	Responsibility: Principal Contractor Mechanism: Planning Condition
Construction	Staff Travel Plan	Responsibility: Principal Contractor Mechanism: Planning Condition

11.8.2 The additional mitigation measures outlined in **Table 11.15** are expanded upon in the following sub-sections.

Construction Traffic Management Plan (CTMP)

11.8.3 The following measures will be implemented during the construction phase through the CTMP, secured via a deemed planning permission condition:

- Agree AIL route upgrades and improvements with Gwynedd Council, NMWTRA and other relevant stakeholders. Works which will be required to facilitate turbine deliveries are outlined in the delivery RSR, which is presented in Annex 1 of **Appendix 11.1**.
- Where possible, the detailed design process will minimise the volume of material to be imported to Site to help reduce HGV numbers.



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- A Site worker transport and travel arrangement plan, including transport modes to and from the worksite (including pick up and drop off times).
- A TMP for AIL deliveries, which is presented in Annex 2 of **Appendix 11.1**.
- All materials delivery lorries (dry materials) should be sheeted to reduce dust and stop spillage on public roads.
- Specific training and disciplinary measures should be established to ensure the highest standards are maintained to prevent construction vehicles from carrying mud and debris onto the carriageway.
- Wheel cleaning facilities may be established at the Site entrance, depending on the views of Gwynedd Council and NMWTRA.
- Normal Site working hours will be limited to between 08:00 and 18:00 (Monday to Friday) and 08:30 and 13:00 (Saturday), though component delivery and turbine erection may take place outside these hours.
- Appropriate traffic management measures will be put in place on the B5401 leading through to the Site, to avoid conflict with general traffic, subject to the agreement of Gwynedd Council and NMWTRA. Typical measures will include HGV turning and crossing signs and/or banksmen at the Site access and warning signs.
- Provide construction updates on the project website and or a newsletter to be distributed to residents within an agreed distance of the Site.
- Adoption of a voluntary reduced speed limits at locations to be agreed with Gwynedd Council and NMWTRA.
- All drivers will be required to attend an induction to include:
 - A toolbox talk safety briefing;
 - The need for appropriate care and speed control;
 - A briefing on driver speed reduction agreements (to slow Site traffic at sensitive locations through the villages and towns); and
 - Identification of the required access routes and the controls to ensure no departure from these routes.

- 11.8.4 As part of the CTMP, which will be provided post consent and secured by condition, an agreement to cover the cost of abnormal wear on the local road network will be required by Gwynedd Council. Video footage of the pre-construction phase condition of the abnormal loads access route and the construction vehicles route will be recorded to provide a baseline of the condition of the road prior to any construction work commencing. This baseline will inform any change in the road condition during the construction phase. Any necessary repairs will be coordinated with Gwynedd Council's highways team. Any damage caused by traffic associated with the Proposed Development during the construction phase that would be hazardous to public traffic will be repaired immediately.
- 11.8.5 Damage to road infrastructure caused directly by construction traffic will be repaired and street furniture that is removed on a temporary basis will be fully reinstated.
- 11.8.6 There will be a regular road review and any debris and mud will be removed from the carriageway using an onsite road sweeper to ensure road safety for all road users.



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11.8.7 Before the AILs traverse the route from the POE, the following tasks will be undertaken to ensure load and road user safety:

- ensure any vegetation which may foul the loads is trimmed back to allow passage;
- confirm there are no roadworks or closures that could affect the passage of the loads;
- check no new or diverted underground services on the proposed route are at risk from the abnormal loads; and
- confirm the police are satisfied with the proposed movement strategy.

Abnormal Load Transport Management Plan (TMP)

11.8.8 The Abnormal Load TMP provided in Annex 2 of **Appendix 11.1** outlines a number of traffic management measures that could help reduce the effect of abnormal load convoys.

Onsite Measures delivered using an Access Management Plan (AMP)

11.8.9 The Outline Access Management Plan (OAMP), as presented in Annex 3 of **Appendix 11.1**, sets out a range of mitigation measures aimed at reducing potential conflicts between construction traffic and non-motorised users, including pedestrians, cyclists and horse riders. Building upon this, further consideration has been given to path users within the Site boundary, with additional measures proposed should they be required.

11.8.10 A Path Planning Study may be undertaken post-consent, secured by a planning condition, and its findings would inform an updated onsite Access Management Plan (AMP).

11.8.11 Measures already set out in the OAMP include:

- the physical separation of PRoW users from construction vehicles using barriers where appropriate;
- provision of clearly signed crossing points, where PRoW users will have priority; and
- compliance with Traffic Signs Manual Chapter 8 (Department for Transport, 2009) temporary signage requirements to ensure clear driver and path user guidance.

11.8.12 The principal contractor will enforce Site-specific speed limits, reinforced through advisory signage and weekly toolbox talks. Site exit signage will remind drivers of local speed restrictions and the presence of vulnerable road users.

11.8.13 On similar schemes The British Horse Society, has provided comment on the potential impacts of construction traffic on horse riders and horses. As such, consideration has been given to them as part of the Proposed Development mitigation measures. These measures are predominantly focused around the interactions between HGV traffic and horses. Horses are normally nervous of large



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vehicles, particularly when they do not often meet them. Horses are flight animals and will run away in panic if really frightened. Riders will do all they can to prevent this but, should it happen, it could cause a serious accident for other road users, as well as for the horse and rider.

11.8.14 The main factors causing fear in horses in this situation are:

- something approaching them, which is unfamiliar and intimidating
- a large moving object, especially if it is noisy
- lack of space between the horse and the vehicle
- the sound of air brakes, and
- anxiety on the part of the rider.

11.8.15 The British Horse Society has previously recommended the following actions that will be included in the Site training for all HGV staff:

- on seeing riders approaching, drivers must slow down and stop, minimising the sound of air brakes, if possible;
- if the horse still shows signs of nervousness while approaching the vehicle, the engine should be shut down (if it is safe to do so);
- the vehicle should not move off until the riders are well clear of the back of the HGV;
- if drivers are wishing to overtake riders, please approach slowly or even stop in order to give riders time to find a gateway or lay by where they can take refuge and create sufficient space between the horse and the vehicle (because of the position of their eyes, horses are very aware of things coming up behind them); and
- all drivers delivering to the Site must be patient, as riders will be doing their best to reassure their horses while often feeling a high degree of anxiety themselves.

Staff Travel Plan

11.8.16 A Staff Travel Plan will be deployed where necessary, to manage the arrival and departure profile of staff and to encourage sustainable modes of transport, especially car-sharing. A package of measures could include:

- appointment of a Travel Plan Coordinator (TPC)
- provision of public transport information
- mini-bus service for transport of Site staff
- promotion of a car sharing scheme, and
- car parking management.

11.9 Assessment of Residual Effects (with Additional Mitigation)



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Construction Phase Effects (with Additional Mitigation)

- 11.9.1 An assessment of the likely effects (with additional mitigation) during the construction phase has been undertaken following the application of mitigation measures outlined in the previous section and is provided in **Table 11.16**.

Residual Construction Effects

- 11.9.2 This chapter presents the findings of the potential residual effects of the Proposed Development on traffic and transport during the construction phase.
- 11.9.3 The Proposed Development will lead to a temporary increase in traffic volumes in the study area during the construction phase. Traffic volumes will fall considerably outside the peak periods of construction.
- 11.9.4 The peak of construction activity is expected to occur in month eight when there will be a total of 2,518 vehicle movements, which equates to 114 vehicle movements per day, comprising 62 two-way HGV movements and 52 two-way car / LGV movements. This would equate to approximately 11 two-way total vehicles movements or six two-way HGV movements per hour, across a typical 10-hour day, assuming a flat traffic profile i.e. vehicles distributed evenly across the day.
- 11.9.5 No link capacity issues are expected on any of the roads assessed due to the additional movements associated with the construction of the proposed development.
- 11.9.6 To avoid repetition below, the summary of this assessment of residual effects is presented in **Table 11.16**
- 11.9.7 With the implementation of appropriate mitigation, no significant residual effects are anticipated in respect of traffic and transport issues. The residual effects are all assessed to be minor or insignificant. As they will occur during the construction phase only, they are temporary and reversible.

Table 11.16 Assessment of Likely Effects (With Additional Mitigation) During the Construction Phase

Paragraph Number	Receptor / Receptor Groups	Description of Impact	Magnitude of Impact	Description of Likely Effect	Mitigation
Table Key: P/T = Permanent or Temporary, D/I = Direct or Indirect, ST/MT/LT = Short Term, Medium Term or Long Term, N/A = Not Applicable					
11.16.1	B4501 Users / Residents	Large Loads	Low	Minor adverse – Not significant T / D / ST	CTMP – will be secured through a planning condition and delivered by the Contractor. Abnormal Load TMP – will be prepared and delivered by the Abnormal Load supplier.
11.16.2	PRoW / Path / Common Land / Open Access Land Users within the Site	Severance	Low	Minor adverse – Not significant T / D / ST	CTMP – will be secured through a planning condition and delivered by the Contractor. Provision of an onsite AMP.
11.16.3	PRoW / Path / Common Land / Open Access Land Users within the Site	Pedestrian Delay	Low	Minor adverse – Not significant T / D / ST	CTMP – will be secured through a planning condition and delivered by the Contractor. Provision of an onsite AMP.
11.16.4	PRoW / Path / Common Land / Open Access Land Users within the Site	Non-motorised user Amenities	Low	Minor adverse – Not significant T / D / ST	CTMP – will be secured through a planning condition and delivered by the Contractor. Provision of an onsite AMP.
11.16.5	PRoW / Path / Common Land / Open Access Land	Fear and intimidation	Low	Minor adverse – Not significant T / D / ST	CTMP – will be secured through a planning condition and delivered by the Contractor. Provision of an onsite AMP.



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Paragraph Number	Receptor / Receptor Groups	Description of Impact	Magnitude of Impact	Description of Likely Effect	Mitigation
Table Key: P/T = Permanent or Temporary, D/I = Direct or Indirect, ST/MT/LT = Short Term, Medium Term or Long Term, N/A = Not Applicable					
	Users within the Site				
11.16.6	PRoW / Path / Common Land / Open Access Land Users within the Site	Road Safety	Low	Minor adverse – Not significant T / D / ST	CTMP – will be secured through a planning condition and delivered by the Contractor. Provision of an onsite AMP.
11.16.7	PRoW / Path / Common Land / Open Access Land Users within the Site	Large Loads	Low	Minor adverse – Not significant T / D / ST	Abnormal Load TMP – will be prepared and delivered by the Abnormal Load supplier.



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11.10 Opportunities for Environmental Enhancement

11.10.1 As part of this assessment, the following opportunities for environmental enhancement have been identified:

- **Recreational Use of Access Tracks:** The proposed access tracks, once constructed, may offer long-term benefits beyond their primary construction purpose. Subject to landowner agreement and appropriate management, these tracks could be made available for use by non-motorised users, such as walkers, cyclists, and horse riders. This would contribute positively to local connectivity and recreation provision, contributing to the existing Public Rights of Way network. Incorporating suitable signage and surfacing treatments could further enhance the usability and safety of these routes for recreational users.

11.11 Difficulties and Uncertainties

11.11.1 The following difficulties and uncertainties have been encountered during the undertaking of this assessment:

- The assessment is based upon average traffic flows in one month periods. During the month, activities at the Site may fluctuate between one day and another and it is not possible to fully develop a day by day traffic flow estimate as no Balance of Plant (BoP) contractor has been appointed and external factors can impact upon activities on a day by day basis (weather conditions, availability of materials, time of year, etc). The assessment has been based on the peak construction month as a robust assessment.
- The year of construction (2035) is considered a reasonable estimate at this time. Should construction start later than this, increases in baseline traffic flows would reduce the potential impact of the Proposed Development. The assessment undertaken is therefore considered as worst case.

11.12 Inter-Project Cumulative Effects

Screening Cumulative Developments within the Zone of Influence

11.12.1 A review of Conwy County Borough Council's planning portal (Conwy County Borough Council, 2025), Gwynedd Council's planning portal (Gwynedd Council, 2025) and the Welsh Government's Development of National Significance portal (Welsh Government, 2025) was undertaken to identify any consented developments within the vicinity of the Proposed Development which would generate significant traffic within the same study area and should be included within the assessment.

11.12.2 TA Guidance (Department for Transport (DfT), 2014) from the UK Government advises that only those projects with extant planning permission or local Development Plan allocations within an adopted or approved plan require to be included in any assessment. Those projects in scoping or at the application stage should not be included in cumulative assessments as they have yet to be determined. When considering traffic impacts specifically in relation to the

construction phase of a project, the potential traffic impact is highly speculative and as such, cannot be included in the assessment.

Table 11.17 Inter-project Cumulative Effects: Screening

ID	Committed Development	Scheme Description	Potential for Cumulative Effects?
C6	Pant y Maen Wind Farm	Consented – 2017 and subsequently in January 2022. Commencement of development no later than five years from the date of consent.	No Potential – Even if construction commences at the end of the commencement period, the development would be completed prior to the commencement of the Foel Fach Project. Furthermore, there are no common sections of study area.
C13	Llanbrynmair Wind Farm	Originally consented in 2021, however, new scheme for redesigned wind farm currently at Scoping stage	No Potential– New scheme being proposed.
C24	Carno III Wind Farm	Consented – January 2022. Commencement of development no later than five years from the date of consent.	No Potential – Even if construction commences at the end of the commencement period, the development would be completed prior to the commencement of the Foel Fach Project. Furthermore, there are no common sections of study area.

Assessment

11.12.3 As detailed in **Appendix 11.1**, the review of committed development schemes (developments with extant planning permission) did not identify any other significant traffic generating developments in the study area that may occur during the construction period associated with the Proposed Development. It is therefore considered that no cumulative assessment is required.

11.12.4 Any effects of multiple sites being constructed at the same time would be mitigated through the use of an overarching Traffic Management and Monitoring Plan and by introducing a phased delivery plan which will be agreed with local council roads department, NMWTRA and the Police.

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