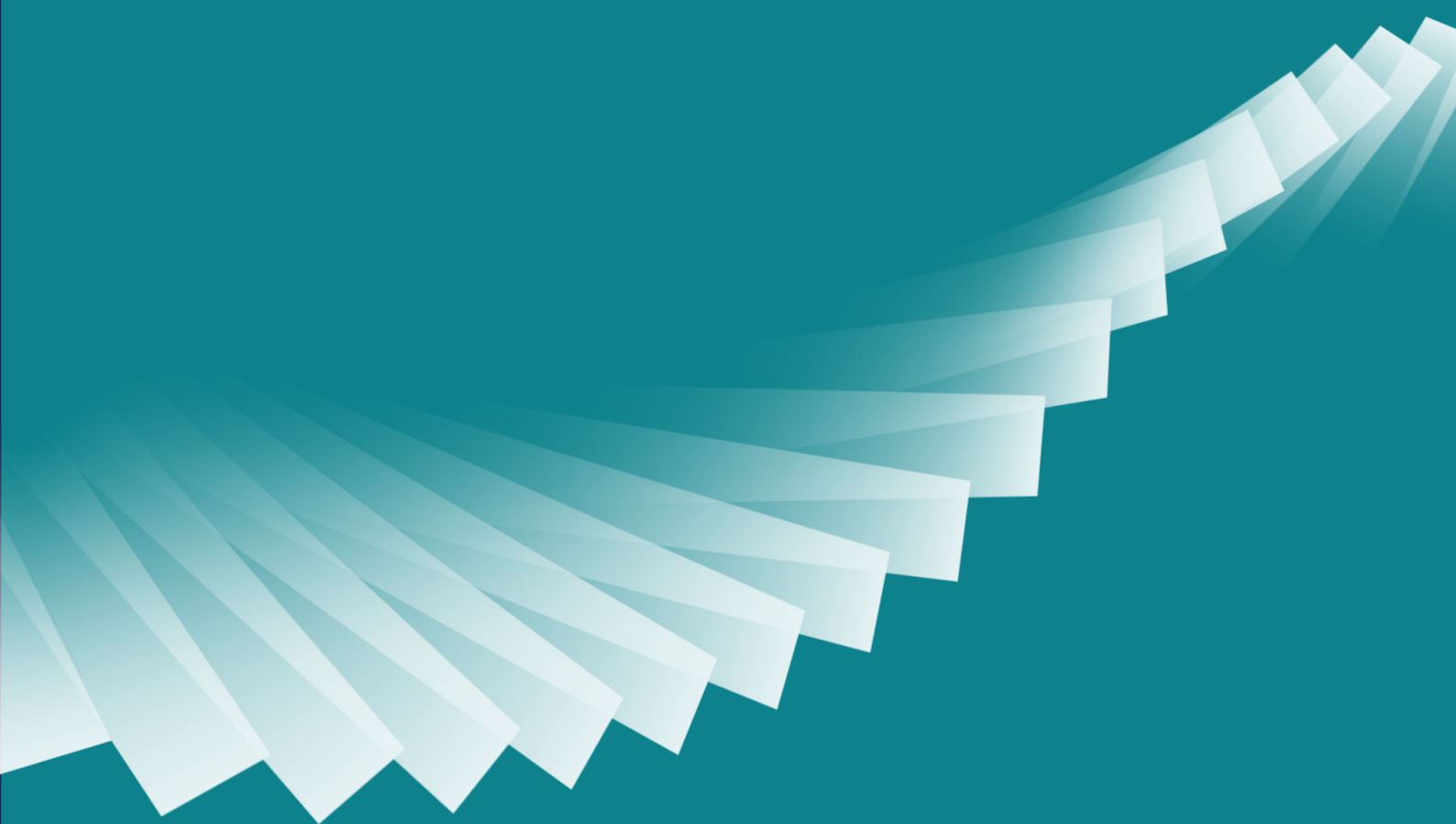




Bute Energy
Aberedw Energy Park

Environmental Statement

Chapter 11: Transport and Access



Chapter 11

Transport and Access

Introduction

11.1 This chapter considers the potential effects of the Proposed Development on Transport and Access. The specific objectives of the chapter are to:

- Describe the existing access network and transport baseline;
- Describe the assessment methodology and significance criteria used in completing the assessment;
- Describe the potential effects, including direct, indirect and any potential cumulative effects;
- Describe the mitigation measures proposed to address likely significant effects (if required); and
- Assess the residual effects remaining following the implementation of mitigation (if required).

11.2 The Transport and Access assessment was undertaken by Pell Frischmann. Further details are provided in **Appendix 1.1: Statement of Expertise**.

11.3 This chapter is supported by a number of figures which are referenced throughout the text, which can be found at **Volume 2: Figures** which include:

- **Figure 11.1: Study Area**
- **Figure 11.2: Traffic Count Locations**
- **Figure 11.3: Personal Injury Accident Locations**
- **Figure 11.4: Abnormal Indivisible Loads Delivery Routes**

11.4 The following appendices are also referred to throughout the chapter and can be found in **Volume 3: Technical Appendices**:

- **Appendix 11.1 Transport Assessment**

■ Appendix 11.2 Transport Management Plan

Assessment Methodology

Legislation, Policy and Guidance

Legislation

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

Policy

11.6 The following policies of relevance to the assessment have been considered:

- Future Wales – The National Plan 2040 (2021)¹;
- Planning Policy Wales Edition 12 (2024)²; and
- Powys County Council Local Development Plan (2011-2026)³.

Guidance

11.7 This assessment is carried out in accordance with the principles contained within the following documents:

- Institution of Environmental Management and Assessment (IEMA) 'Guidelines for Environmental Impact Assessment' (2005)⁴;
- Institute of Environmental Assessment, Guidelines for the Environmental Assessment of Road Traffic (1993)⁵;
- Environmental Assessment of Traffic and Movement (IEMA), (2023)⁶;

¹ The Welsh Government (2021), Future Wales – The National Plan 2040

² The Welsh Government (2020), Planning Policy Wales Edition

³ Powys County Council (2018), Powys Local Development Plan (2011-2026)

⁴ Institution of Environmental Management and Assessment (2005), Guidelines for Environmental Impact Assessment

⁵ Institute of Environmental Assessment (1993), Guidelines for the Environmental Assessment of Road Traffic

⁶ Institute of Environmental Management and Assessment (2023), Environmental Assessment of Traffic and Movement

- LA104, Environmental assessment and monitoring, the Design Manual for Roads and Bridges (DMRB) (2020)⁷;
- Technical Advice Note 18: Transport (2007)⁸;
- Welsh Transport Appraisal Guidance (WelTAG) (2017)⁹;
- Strategic Traffic Management Plan (STMP)¹⁰; and
- Pulling Together, Best Practice for Transporting Abnormal Loads in Wales (2020).¹¹

Consultation

11.8 In undertaking the assessment, consideration has been given to the Scoping responses and other consultation which has been undertaken as detailed in **Table 11.1**.

⁷ Highways England, Transport Scotland, Welsh Government & Department for Infrastructure (2020), LA104, Environmental assessment and monitoring, the Design Manual for Roads and Bridges (DMRB)

⁸ The Welsh Government (2007), Technical Advice Note 18 Transport

⁹ The Welsh Government (2017), Welsh Transport Appraisal Guidance

¹⁰ Renewables UK Cymru (2012), Strategic Transport Management Plan

¹¹ The Welsh Government (2020), 'Pulling Together' Best Practice for Transporting Abnormal Loads in Wales

Table 11.1 Consultation responses

Consultee and Date	Scoping/Other Consultation	Issue Raised	Response/Action Taken
PEDW 05 April 2025	Scoping Direction	Public Rights of Way (PRoW) The Applicant's attention is drawn to Powys County Council's (PCC) comments where they highlight that the Proposed Development will have both and indirect and direct impact on PRoW, common land and access land. As stated in the SR, consideration of these impacts should form part of the EIA. PCC have identified 21 PRoW within the proposed redline boundary details of these can be found in their comments in Appendix 1. PCC note that a number of the PRoWs on site are within topple zones of turbines. If turbines remain to be proposed in these	Details of the PRoWs which are located within the Site are listed in Appendix 11.1. The PRoWs located within the Site are included as part of the assessment within this chapter during the construction phase. It is recognised that it will be necessary to divert PRoWs, either temporarily or permanently, for both the construction and operational phases of the Proposed Development. The Applicant is currently in discussions with PCC regarding access and recreation. While the operational phase is scoped out, it should be noted that any necessary permanent diversions to the PRoW

Consultee and Date	Scoping/Other Consultation	Issue Raised	Response/Action Taken
		locations then permanent legal diversions will be required, before any construction effecting the PRow can commence. The Applicant is encouraged to liaise with PCC's Countryside Access and Recreation team regarding impacts on PRow's and the consenting strategy. PEDW recommends upon determining the final size and location of the turbines, the Applicant should review the topple distance to PRow and liaise directly with PCC on this matter. The Applicant's attention is drawn to the comments from PCC in relation to PRow and the measures that should be taken if any work is proposed that might	network will be discussed and agreed with PCC. This will be set out in a Path Management Plan (PaMP), the content of which is outlined within the Proposed Mitigation (Additional Mitigation) and Compensation section of this chapter. No secondary consents relating to stopping up and diversion of highways are being sought, and any necessary consents will be sought post-consent following detailed design.

Consultee and Date	Scoping/Other Consultation	Issue Raised	Response/Action Taken
		affect PRoW including access tracks, borrow pits, temporary closures. In certain circumstances details may need to be agreed with the Countryside Access and Recreation team before work commences. Further attention is drawn to PCC's comments in Appendix 1 in regard to mitigation sought in regard to PRoW. PEDW recommend that the Applicant liaises directly with PCC to discuss these matters. Whilst not necessarily relevant to the Scope of the ES, the Applicant should note that if they choose to pursue Secondary Consents in relation to permanent stopping-up or diversion of Highways, they should contact the Orders Branch of Welsh Government's	

Consultee and Date	Scoping/Other Consultation	Issue Raised	Response/Action Taken
		Transport Directorate (TransportOrdersBranch@gov.wales) to begin liaising over draft Orders, as any draft Order and supporting application documents would need to be included in the statutory pre-application publicity and engagement materials for the DNS process.	
PEDW 05 April 2025	Scoping Direction	Open Access Land As acknowledged in the SR, PCC highlight that the development also takes in a significant area of designated open access land where the public has a right of access on foot for recreation, part of which is registered common land (RCL046 – Aberedw Hill common). The Applicant's attention is also drawn to the Common Land section below.	Details of the common land which is located within the Site is shown in Appendix 11.1 and the common land located within the Site are included as part of the assessment within this chapter. The Common Land Report and secondary consent application forms in relation to works on common land and the deregistration and exchange of common

Consultee and Date	Scoping/Other Consultation	Issue Raised	Response/Action Taken
			land provide further information on the effects of the Proposed Development on Aberedw Hills Common and Hungry Green Common.
PEDW 05 April 2025	Scoping Direction	Assessment methodology / Study Area PEDW recommends that the Applicant liaises directly with PCC's highways department on this matter.	The Study Area is outlined in paragraph 11.129 and was outlined in the Scoping Report. An additional section along the C1336 which provides access to the wind farm element of the Proposed Development has also been added to the Study Area. As noted earlier in this table, the Applicant is currently in discussions with PCC regarding access and recreation.
PEDW	Scoping Direction	Trunk Road Network Impact	An outline Construction Traffic Management Plan (CTMP) is provided in

Consultee and Date	Scoping/Other Consultation	Issue Raised	Response/Action Taken
05 April 2025		In their comments in Appendix 1, Transport Directorate, Welsh Government (the Directorate) state that the scope of the Transport Assessments should cover the general construction phase vehicle movements to the Site and the delivery of the wind turbine components as Abnormal Indivisible Loads (AILs). The Directorate note the potential adverse impact on the trunk road network due to the larger new generation wind turbines. A guidance document for AIL is included in Appendix 1. PEDW welcomes the SR states a Construction Traffic Management Plan (CTMP) will be produced and recommends a draft CTMP is included as a technical appendix to the ES. The Applicant's attention	the Committed Additional Mitigation section of this chapter. It is proposed that measures included in the outline CTMP will be included in the detailed CTMP which will be secured through an appropriately worded planning condition. An outline abnormal indivisible load (AIL) Transport Management Plan (TMP) is provided as Appendix 11.2. It is proposed that measures included in the outline TMP will be included in the final TMP which will be secured through an appropriately worded planning condition.

Consultee and Date	Scoping/Other Consultation	Issue Raised	Response/Action Taken
		is drawn to the Directorate's response, outlining information to be included in the CTMP. Further attention is drawn to the Directorate's guidance document included at Appendix 1: 'Pulling Together' - Best Practice for Transporting Abnormal Loads in Wales.	
PCC 15 December 2023	Scoping Direction	Questions for Chapter 10 – Transport and Access The LPA has no comments to make in response to Q 11.1 – 11.5 (sic). Please see PCC Countryside Services comments in relation to public rights of way.	Noted. Comments on PRoW are provided further in the table.

Consultee and Date	Scoping/Other Consultation	Issue Raised	Response/Action Taken
PCC Countryside Services 27 March 2024	Scoping Direction	There are 21 public rights of way within the proposed red line development area; 16 footpaths and 5 bridleways.	Noted. A list of the PRowWs within the Site boundary are shown and listed in Appendix 11.1 .
PCC Countryside Services 27 March 2024	Scoping Direction	The development also takes in a significant area of designated open access land, where the public has a right of access on foot for recreation. As the developer acknowledges, part of this registered common land, being RCL046 (known as Aberedw Hill common) Common land does benefit from a high degree of legal protection. Under section 38 of the Commons Act 2006, it is unlawful for 'restricted works' to take place on common land without prior consent. The developer will need to obtain common land consent as a secondary consent for any changes to the	As part of the design process, the Applicant has carefully considered the extent and nature of any works within the common land area. Where possible, the Applicant has taken measures to minimise impacts on public access and the character of the common. See Chapter 3: Design and Site Selection Strategy of the ES. The Applicant recognises that any such works proposed within the boundary of Aberedw Hills Common will require common land consent. The relevant

Consultee and Date	Scoping/Other Consultation	Issue Raised	Response/Action Taken
		access track, new access tracks, fences, ditches, embankments or other work on the common.	secondary consent applications are submitted alongside the DNS application.
PCC Countryside Services 27 March 2024	Scoping Direction	Offsite works can have the potential to directly affect public rights of way, such as temporary road works to accommodate abnormal loads. All have the potential to have a direct impact on public rights of way, but there is insufficient information to comment at this time.	Noted. Any offsite works will be subject to agreement with the appropriate highway authority. The appropriate consents will be secured before any works are undertaken.
PCC Countryside Services 27 March 2024	Scoping Direction	Several bridleways cross the site; the British Horse Society's (BHS) guidance is that there be a minimum separation distance of 200m or three times blade tip height (whichever is greater) between turbines and the nearest bridleway. However, the need to assess	Wherever possible, the design of the Proposed Development avoids PRoWs, however there are elements of the Proposed Development located on and in the vicinity of the PRoW network.

Consultee and Date	Scoping/Other Consultation	Issue Raised	Response/Action Taken
		individual sites is recognised, so it is recommended that the developer consults with the BHS directly. The developer should give consideration to provision of alternative routes for the lifetime of the development, with articular reference to the needs of equestrians.	All works proposed along and in the vicinity of PRowWs will be discussed and agreed with the appropriate PCC Officer(s) prior to works commencing. As previously noted, a PaMP will be produced which will contain measures to address the potential adverse effects of PRow users.
PCC Countryside Services 27 March 2024	Scoping Direction	There are a number of rights of ways within topple zones of turbines and micrositing of turbines may increase this. If turbines are located on the public rights of way, or the public rights of way are within topple zones, then a permanent legal diversion will be required, as a secondary consent, before any construction affecting the line of the public	In consideration of the constraints relating to siting of the wind turbines and associated infrastructure, it has not been possible to locate all wind turbines out of the tip height stand-off distance from PRowWs or completely avoid some infrastructure interface with PRowWs. The extent of any PRow diversions will be

Consultee and Date	Scoping/Other Consultation	Issue Raised	Response/Action Taken
		right of way can commence. This has been raised during the Inception Meeting (2 nd Oct 2023) and shown in the included meeting notes; that the developer indicates that they may be seeking a secondary consent under s247 TCPA 1990. Details of any proposed diversion route must be agreed with the Countryside Access and Recreation team beforehand, to ensure that the diversion route is appropriately located for accessibility, maintenance and connections with the surrounding network.	determined post-consent, following the micro-siting of turbines. As above, all works proposed along and in the vicinity of PRoWs will be discussed and agreed with the appropriate PCC Officer(s) prior to works commencing. As previously noted, a PaMP will be produced which will contain measures to address the potential adverse effects of PRoW users.
PCC Countryside Services 27 March 2024	Scoping Direction	New access tracks constructed for the wind farm can adversely affect the public rights of way due to changes of level and surfacing, new drainage ditches, culverts and fencing. These details must be agreed with the	The access tracks will be designed and constructed so that they will not adversely affect the PRoWs during the operational phase of the Proposed Development.

Consultee and Date	Scoping/Other Consultation	Issue Raised	Response/Action Taken
		Countryside Access and Recreation team in advance, at all locations where an access track will cross or coincide with the line of a public right of way. Conversely, new access tracks may provide useful permissive routes for the public, for the lifetime of the development and this should be considered in an access strategy for the site.	It should be noted that once the Proposed Development is operational, the access tracks will be available for and have a positive impact on public access.
PCC Countryside Services 27 March 2024	Scoping Direction	If borrow pits are to be used for quarrying stone for the access tracks, the locations need to be sited away from the public rights of way to ensure that gradients and surface levels are not changed. Transportation of material from the borrow pits to the turbine tracks should be managed to minimise disturbance to the public rights of way.	Wherever possible, the design of the Proposed Development avoids PRowWs, however there are short sections of the turbine tracks that will be located on the PRowW network. The borrow pits are to be sited away from the PRowW. All works proposed along and in the vicinity of PRowWs will be discussed and agreed

Consultee and Date	Scoping/Other Consultation	Issue Raised	Response/Action Taken
			with PCC Officers prior to works commencing. Any adverse impacts on the PRow network during the construction phase will be addressed in the Path Management Plan. Onsite measures to be delivered as part of the plan includes that users of the PRowS will be separated from construction traffic using barriers (where permitted and appropriate) which will ensure that safe access to the Site for recreational purposes will be maintained.
PCC Countryside Services 27 March 2024	Scoping Direction	Temporary closures of public rights of way may be required during construction. Details of the phasing and timing of these closures and any alternative routes must be agreed	Comment noted. This will be discussed and agreed with the appropriate PCC Officer(s) post consent and prior to works commencing.

Consultee and Date	Scoping/Other Consultation	Issue Raised	Response/Action Taken
		with the Countryside Access and Recreation team before work commences. The developer must also note that there is a lead time of up to 10 weeks to implement a new temporary closure and must plan their activities and liaise with the Countryside Access and Recreation and Streetworks team accordingly.	The Applicant is liaising directly with PROW officer(s) at PCC to discuss the requirement for any permanent or temporary PROW diversions and opportunities for securing recreational enhancements.
PCC Countryside Services 27 March 2024	Scoping Direction	Temporary site compounds, cables and substations and environmental measures such as newt fencing and watercourses or ponds may also impact on public rights of way. These features must be located to avoid public rights of way.	Wherever possible, the design of the Proposed Development avoids PROWs, however there are elements of the Proposed Development located on and in the vicinity of the PROW network. All works proposed along and in the vicinity of PROWs will be discussed and agreed with PCC Officer(s) prior to works

Consultee and Date	Scoping/Other Consultation	Issue Raised	Response/Action Taken
			commencing, including the need for an ecology-related mitigation.
PCC Countryside Services 27 March 2024	Scoping Direction	The proposed Traffic Management Plan must consider the impact of both construction and maintenance traffic and associated works on all public highways, including public rights of way and open access land. This will allow for appropriate mitigation to be considered from the outset in consultation with the Countryside Access and Recreation Team.	Two potential proposed turbine component delivery routes have been identified by the Applicant from the Port of Entry (PoE) at Port of Swansea and the Port of Birkenhead. Any highway works required to facilitate the chosen route, with the exception of the Site access junction, will be subject to approval via other consents, separate to the DNS application.
PCC Countryside Services 27 March 2024	Scoping Direction	The proposals will impact on outdoor recreation opportunities within the site, which is within 5 km of Builth Wells, Aberedw & Franskbridge. The importance of public rights of way and other outdoor recreation	It is proposed that a PaMP will be developed which will manage the impact on PRow users during the construction period. It is considered that this will form a

Consultee and Date	Scoping/Other Consultation	Issue Raised	Response/Action Taken
		opportunities for our residents and visitors are highlighted in the Council's Rights of Way Improvement Plan 2018-28. The Rights of Way Improvement Plan sets out the Council's strategic aspirations in terms of maintaining and enhancing the public rights of way for health and wellbeing and for their economic benefits.	planning condition should the Proposed Development be granted planning consent. A Strategic Recreation Framework will be submitted with the DNS application. This is an aspirational document seeking to enhance access to the Site.
PCC Countryside Services 27 March 2024	Scoping Direction	We note that the developer acknowledges the need to explore mitigation in relation to impacts on public rights of way and access to the countryside. The Countryside Access and Recreation team seek the following mitigation: a) That the developer ensures that the public paths within the site are fully open for use	As above.

Consultee and Date	Scoping/Other Consultation	Issue Raised	Response/Action Taken
		and where appropriate, seeks to enhance the paths e.g. via replacement of stiles with gates and improved drainage and surfacing b) Section 106 funds to enhance offsite public rights of way and open access land, payable on commencement of development.	
Welsh Government Department for Economy and Infrastructure 02 February 2024	Scoping Direction	Welsh Government as highway authority for the A470 and A483 trunk roads in the area of the proposal agrees that its interests in the Strategic Road Network should be scoped in to mitigate and address concerns over the development's impact on the trunk road network. This should cover the general construction phase vehicular movements to	The A470 and A483 have been included in this Transport and Access assessment.

Consultee and Date	Scoping/Other Consultation	Issue Raised	Response/Action Taken
		site and the delivery of the wind turbine components as Abnormal Indivisible Loads (AIL's) that could affect the wider trunk road network.	
Welsh Government Department for Economy and Infrastructure 02 February 2024	Scoping Direction	Paying particular attention to the component lengths for these large new generation wind turbines with a 200m+ blade tip height and individual blade lengths of 70m+. These large size components are a big increase on previous wind farm AIL delivery sizes and have the potential to adversely impact the trunk road network and its traffic. These concerns should be covered in an approved fully developed Construction Traffic Management Plan (CTMP) for the scheme.	A detailed AIL TMP and a detailed CTMP will be prepared and will be secured through appropriately worded planning conditions. An outline AIL TMP is provided as Appendix 11.2 and an outline CTMP is provided in the Committed Additional Mitigation section of this chapter. A detailed Route Survey Report (RSR) examining the selected delivery route from the port through to the Site access junction

Consultee and Date	Scoping/Other Consultation	Issue Raised	Response/Action Taken
			will be undertaken as part of a separate application.
Welsh Government Department for Economy and Infrastructure 02 February 2024	Scoping Direction	The scope should include the following information: 1. Proposals for transporting Abnormal Indivisible Loads (AILs) from their point of entry to the Welsh trunk road network to the site that minimise any impact on the safety and free flow of trunk road traffic. Consider the need for a trial run of the largest components, given their increased size over previous wind farm deliveries on this part of the network. 2. Number and size of AILs, including loaded dimensions and weights	The detailed AIL TMP will be prepared, and will be secured through an appropriately worded planning condition. An outline AIL TMP is provided in Appendix 11.2.

Consultee and Date	Scoping/Other Consultation	Issue Raised	Response/Action Taken
		3. Number and composition of AIL convoys, including anticipated escort arrangements to any works that are carried out to enable AIL movements 4. Methodology for managing trunk road traffic during AIL deliveries, including identification of passing places and holding areas as necessary 5. Convoy contingency plans in the event of incidents or emergencies 6. Estimated convoy journey durations and timings along the route, including release of forecast traffic queues 7. Swept path analysis modelling the movement of the worst case AILs at horizontal and vertical constraints along	

Consultee and Date	Scoping/Other Consultation	Issue Raised	Response/Action Taken
		the access route where appropriate, at the discretion of the Highway Authority 8. Proposals for the temporary or permanent modification of any affected street furniture along the access route and details of how this would be managed 9. Plans for the reinstatement of any temporary works after completion of the construction phase 10. Proposals to liaise with all relevant stakeholders and members of the public regarding construction traffic and AIL movements. 11. Details of temporary signage. The above information is required to maintain the safety and free flow of trunk road traffic.	

Consultee and Date	Scoping/Other Consultation	Issue Raised	Response/Action Taken
		12. The need for any formal Temporary Traffic Regulation Orders (TTRO's) that could be required to facilitate the AIL convoys. Also to consider the timescale for processing and approving such statutory Orders. 13. The Applicant should be advised that they will be required to enter into an Agreement with the Welsh Ministers under Section 278 of the Highways Act 1980 to enable the Applicant to undertake any improvement works which may be required on the trunk road. This Agreement will contain details of the improvement works, construction conditions and financial arrangements under which agreed measures can be put in place, including indemnifying the Welsh	

Consultee and Date	Scoping/Other Consultation	Issue Raised	Response/Action Taken
		Ministers against third party claims. Without such an agreement in place, any consent that may be granted by the Planning Authority cannot be implemented.	

Study Area

11.9 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.

11.10 It is estimated that construction personnel will access the Site from the east and west on the A481 and route to the Site via the C1336 to the Site access. Strategic access to the Site will be taken from the A470 and the A483, both accessed to the west of the Site directly from the A481.

11.11 There are two route options being considered for the delivery of AILs which will be delivered to the Site, either from the selected PoE at Port of Swansea or Port Birkenhead.

11.12 Based on the above, the Study Area for the assessment comprises:

- C1336, from A481 to the Site access;
- A481, between Llanelwedd and Fforest Mill;
- A470, between Builth Wells and Bronllys;
- A483, between Builth Wells and Crossgates; and,
- A44, between Crossgates and Kington.

11.13 Effects associated with construction traffic generated by the Proposed Development will be most pronounced in close proximity 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.

11.14 The Study Area network is presented in **Figure 11.1**.

Desk Based Research and Data Sources

11.15 The following data sources have informed the assessment:

- 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;
- Collection of existing traffic flow information;
- Review of the relevant roads hierarchy;
- Review of personal injury accident data – crashmap.co.uk;
- Identification of sensitive locations within the 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 – PCC’s planning portal and the Welsh Government’s Development of National Significance portal; 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 Survey

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

- A visit to the Site and wider Study Area to review the potential access routes and potential constraints was undertaken in 2023.

Assessing Significance

Sensitivity

11.17 The Institute of Environmental Management and Assessment (IEMA) ‘Guidelines for Environmental Impact Assessment’ (2005)⁴ 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' (2023) provides an update to the previously used guidance, 'Guidelines for the Environmental Assessment of Road Traffic' (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.

11.18 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.

11.19 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 Classification of Receptor Sensitivity

Receptor	Sensitivity			
	High	Medium	Low	Negligible
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 restrictions,	Where the road is a local A or B class road, capable of regular use by HGV traffic. Includes roads where there are some traffic calming or traffic management measures.	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.	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

Receptor	Sensitivity			
	High	Medium	Low	Negligible
	traffic calming measures.			strategic trunk road junctions capable of accommodating Abnormal Loads.
Users / Residents of Locations	Where a location is a large rural settlement containing a high number of community and public services and facilities.	Where a location is an intermediate sized rural settlement, containing some community or public facilities and services.	Where a location is a small rural settlement, few community or public facilities or services.	Where a location includes individual dwellings or scattered settlements with no facilities.

11.20 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.

11.21 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

11.22 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 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.

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

11.24 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 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 mitigation in terms of addressing

potential impacts on sensitive receptors are included as standard within Committed Additional Mitigation section.

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

11.26 Table 3.7 of LA104 Environmental Assessment Methodology of the Design Manual for Roads and Bridges (DMRB) 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 below in **Table 11.3**.

Table 11.3 Magnitude of Impact

Magnitude	Description
Major	These effects are considered to be material in the decision-making process.
Moderate	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.
Minor	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.

Significance

11.27 The predicted significance of the effect was determined through a standard method of assessment based on professional judgement, considering both sensitivity of receptor and magnitude of impact as detailed in **Table 11.4**.

Table 11.4 Significance Criteria

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

11.28 Significance is categorised as major, moderate, minor or negligible. Effects judged to be of major or moderate significance are considered to be significant in the context of the EIA guidance and require mitigation.

11.29 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 in the context of the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017.

Assessment Assumptions

11.30 The following assumptions have been made when undertaking the assessment of effects:

- A construction programme of 15 months.

- 50% of aggregate materials will be imported to the Site, with the remaining 50% won onsite from the proposed borrow pits (note, **Chapter 4: Development Description** identifies that up to 100% of material can be won onsite, however, to ensure that a suitably robust assessment has been undertaken, the aforementioned assumption has been used to inform the production of this chapter).
- The year of construction is assumed to be 2028 and has been used for the basis of the assessment within this chapter.

11.31 Further details on assumptions made, including construction traffic routing and distribution and where raw material will be sourced, is included in **Appendix 11.1**.

Assessment Limitations

11.32 Limitations to the assessment are as follows:

- 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. 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).
- Assumptions on the original points for materials have been made to provide a worst-case assessment scenario. Should these origin points change, the effects on the Study Area may alter to those presented in the assessment.
- Construction material estimates set out in **Appendix 11.1** are based on experience of what is likely to be required for a project of this size and are considered to be appropriate for enabling a robust assessment of effects to be made.
- It is considered that there is sufficient information to enable an informed decision to be taken in relation to the identification and assessment of likely significant environmental effects on Transport and Access.

Active Travel Network

11.33 There are no dedicated pedestrian facilities in the immediate vicinity of the main Site access to Wind Farm Site access and the Substation Site access of the Proposed Development on the C1336 and the substation Site access on the A481, reflecting its rural setting. Further away from the Proposed Development in the wider Study Area, there are pedestrian facilities within the settlements located within the Study Area.

11.34 The level of pedestrian infrastructure in the immediate vicinity of the Site is commensurate with the scale of the local settlements and their rural setting.

11.35 A review of the PCC Public Rights of Way Map indicates a number of PRowWs within the boundary of the Site. A list of the PRowWs located within the Site boundary, as well as a figure showing the location of the PRowWs are shown in **Appendix 11.1** in **Section 5.3**.

11.36 A review of the Sustrans National Cycle Network (NCN) map indicates that there are two NCN routes within the vicinity of the Proposed Development.

11.37 NCN Route 825 (Radnor Ring) is a mainly on-road, circular cycle route of approximately 107 km in length which routes around the old county of Radnorshire. NCN Route 825 begins at Rhayader and mainly runs through Powys, however, in the east, the route runs back and forth over the Welsh English border into Herefordshire passing through Kington, Presteigne and Knighton. Within the Study Area, NCN Route 825 runs along the C1336 and passes the Site access junction. It continues along a short section of the A481 of approximately 520 m between the A481 / C1336 priority junction and Hundred House. NCN Route 825 overlaps the Study Area again for a short section of the A483 of approximately 210 m in length within Llandrindod Wells.

11.38 NCN Route 8 (the Lôn Las Cymru) is a mainly on-road route which starts in Cardiff, routes through the Brecon Beacons and Snowdonia and ceases on the island of Anglesey. NCN Route 8 runs along the B4567, bordering the Site to the west, and overlaps the Study Area for a small section of the A481 of approximately 150 m in length to the east of Llanelwedd, between the A483 / Parc Menter Wyese Enterprise Park roundabout and the A481 / B4567 priority junction.

11.39 A review of the Common Land (CROW Act) Fully Attributed Dataset indicates that there are large areas of common land within and adjacent to the Site boundary.

11.40 A review of the CROW Act fully attributed dataset indicates that there are small sections of Open Access Land within the Site boundary. Additional information on common land can be found in the **Common Land Report** submitted with the DNS application.

11.41 These are shown in **Appendix 11.1** in **Section 5.4**.

Road Access

C1336

11.42 The C1336 is a narrow two-way single carriageway road which connects Hundred House with Glascwm. Within the Study Area, the C1336 is initially subject to a 40 miles per hour (mph) speed limit for approximately 130 m south of its junction with the A481, increasing to 60 mph. The C1336 is maintained by PCC and is mainly of a reasonable standard however there are sections where deterioration is visible from online imagery.

U1377

11.43 The U1377 is a single-track road which leads from the C1336 to Graig-Yr-Onen, and tracks within the Site boundary. A cattle grid is located on the U1377 road, approximately 18 m from the junction with the C1336.

A481

11.44 The A481 is a two-way single carriageway road which connects the A483 with the A44. The A481 is generally subject to a 60 mph speed limit, reducing to 40 mph through Hundred House and on approach to Llanelwedd, and reducing further to 20 mph within Llanelwedd. The A481 is maintained by PCC and appears to be in good condition, based on available online imagery.

A483

11.45 The A483 is a trunk road which runs from Swansea in the south of Wales to Manchester, England. Within the Study Area, the A483 is generally subject to a 60 mph

speed limit, reducing to 50 mph within Crossway and Howey and to 20 mph and 30 mph in settlements such as Builth Wells, Llanelwedd, Llandrindod Wells, and Crossgates. The A483 is maintained by the North and Mid Wales Trunk Road Agent (NMWTRA) and appears to be in mainly good condition, based on available online imagery.

A44

11.46 The A44 is a major road which runs from Oxford, England to Aberystwyth, Wales. Within the Study Area, the A44 is a two-way single carriageway road and is mainly subject to the national speed limit, 60 miles per hour (mph), however at some locations along the road, the speed limit is reduced and signposted. Within the Study Area, the A44 is maintained by PCC and appears to be in mainly good condition, based on available online imagery.

A470

11.47 The A470 is a trunk road which runs from Cardiff in the south to Llandudno in the north. Within the Study Area, the A470 is generally subject to a 60 mph speed limit, reducing to 20 mph and 30 mph in Erwood and reducing to 20 mph in Builth Wells. The A470 is maintained by the NMWTRA and appears to be in mainly good condition, based on available online imagery.

Existing Traffic Conditions

11.48 To assess the impact on the transport routes within the Study Area, a series of Automatic Traffic Count (ATC) sites were established between 21 and 27 October 2023.

11.49 To complement the ATC surveys, Annual Average Daily Traffic (AADT) flows were also obtained from the UK Department for Transport (DfT) traffic database. Available 2023 flow information was obtained for all locations, with the exception of two locations where 2018 and 2019 data utilised.

11.50 In order to assess the impact of development traffic on the Study Area, baseline traffic data has been used from ATC surveys and the DfT database.

11.51 The traffic count sites used are as follows:

1. C1336, south of the Site access junction (Counter ID: 805096, 2023 data);
2. A481, west of access to Fforest Fields (Counter ID: 10590, 2018 data);
3. A481, west of A481 / A44 priority junction (ATC 2023 data);
4. A44, east of A481 / A44 priority junction (ATC 2023 data);
5. A44, south-west of New Radnor (Counter ID: 30519, 2023 data);
6. A44, north of A481 / A44 priority junction (ATC 2023 data);
7. A44, east of Crossgates (Counter ID: 40519, 2023 data);
8. A483, south of Crossgates (Counter ID 546: 2023 data);
9. A483, Llandrindod Wells (Counter ID 20555: 2023 data);
10. A483, Ridgebourne (Counter ID 40557: 2023 data);
11. A483, east of A483 / A470 roundabout (Counter ID 10556: 2023 data)
12. A483, north of Wye Bridge (Counter ID 10544; 2023 data);
13. A470, Aberduhonw (Counter ID 40544; 2023 data);
14. A470, south of Erwood (Counter ID 20543; 2023 data); and,
15. A470, north of A470 / A438 priority junction (Counter ID 538; 2023 data).

11.52 The traffic surveys and 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 more than 3.5 tonnes gross maximum weight).

11.53 A National Road Traffic Forecast (NRTF) growth factor was applied to the ATC and DfT survey data to bring the traffic data up to the base year of 2025. NRTF Low Growth factors have been applied to the surveyed traffic data. The NRTF Low Growth factor for 2018 to 2025 is 1.046, 2019 to 2025 is 1.038 and 2023 to 2025 is 1.011.

11.54 These sites were identified as being areas where sensitive receptors on the access routes will be located.

11.55 The ATC survey locations and the DfT count site locations are shown in **Figure 11.2**.

11.56 Table 11.5 summarises the 24-hour average daily traffic data at the count sites.

Table 11.5 24-hour Average Traffic Data (2025)

No.	Survey Location	Car & LGV	HGV	Total	% HGV
1	C1336, near Site Access	151	6	157	4%
2	A481, west of access to Fforest Fields	951	79	1,030	8%
3	A481, west of A481 / A44 priority junction	559	215	774	28%
4	A44, east of A481 / A44 priority junction	1,885	680	2,565	27%
5	A44, south-west of New Radnor	2,452	175	2,627	7%
6	A44, north of A481 / A44 priority junction	1,477	461	1,938	24%
7	A44, east of Crossgates	3,999	293	4,292	7%
8	A483, south of Crossgates	7,070	248	7,318	3%
9	A483, Llandrindod Wells	6,225	153	6,377	2%
10	A483, Ridgebourne	6,747	212	6,960	3%
11	A483, east of A483 / A470 roundabout	5,942	330	6,271	5%
12	A483, north of Wye Bridge	8,959	542	9,501	6%
13	A470, Aberduhonw	4,878	384	5,262	7%

No.	Survey Location	Car & LGV	HGV	Total	% HGV
14	A470, south of Erwood	5,885	351	6,236	6%
15	A470, north of A470 / A438 priority junction	3,874	248	4,122	6%

Please note that variances may occur due to rounding.

Personal Injury Accident Review

11.57 Personal Injury Accident (PIA) data was obtained for the five-year period covering 2019 to 2023 (which is the latest information available) for the A481, as agreed in the Scoping Opinion, as well as the C1336 leading towards the main Site access. Data was obtained from the online resource CrashMap which uses data collected by the Police about road traffic crashes occurring on Welsh roads, where someone is injured.

11.58 Transport Assessment Guidance 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 five-year period, particularly if the site has been identified as being within a high accident area. Whilst the PIA assessment area has not been identified as having a high accident rate, a five-year review has been undertaken to ensure a comprehensive assessment has been undertaken.

11.59 The statistics are categorised into three categories, namely “Slight” for damage only incidents, “Serious” for injury accidents and “Fatal”, for those accidents that result in a death.

11.60 The locations and severity of the recorded accidents within the PIA assessment area are summarised in **Table 11.6** while **Figure 11.3** shows their locations.

Table 11.6 PIA Summary

Road Link	Slight	Serious	Fatal	HGV
A481	8	4	0	1

Road Link	Slight	Serious	Fatal	HGV
C1336	1	0	0	0
Total	9	4	0	1
Percentage of total accidents	69%	31%	0%	8%

11.61 A general summary of the accidents is as follows:

A481

- There was a total of 12 accidents recorded on the A481 within the most recent five-year period. Of those 12, eight were categorised as being “slight” (67%), four categorised as “serious” (33%). There were no fatalities.
- Of the 12 accidents, one involved an HGV and occurred east of the A481 junction with the B4567. The accident involved one vehicle, resulting in two casualties, and was categorised as being “slight”.
- An accident which was classified as “slight” was recorded approximately 270 m to the east of the proposed substation Site access and involved a single car accident.
- Three accidents on the A481 occurred at the same junction, with the A483. Two of these accidents involved a motorcycle, one involved a bus, and two involved a car. All accidents were categorised as being “slight”.
- A total of two of the accidents occurred within Winter months (December to March) when poor weather conditions may have exacerbated the risk of an accident occurring.
- A total of five accidents involved a motorcycle, three of which were single vehicle incidents.
- There was a total of three accidents on the A481 which involved a young driver (under 25).
- There were no accidents recorded resulting in a pedestrian, child, or cycle casualty.

C1336

- One accident occurred on the C1336 and was categorised as being “slight”.
- The accident occurred at the proposed Site access junction and involved two cars, resulting in two casualties.

Summary

11.62 The analysis indicates that there has been a total of 13 PIA incidents recorded along the assessed links within the most recent five-year period. Most recorded accidents were categorised as being “slight” (69%), with 31% of incidents recorded as “serious” and none resulting in a fatality. Only 8% of incidents recorded involved an HGV.

11.63 An accident occurred at the location of the main Site access junction which was recorded as being “slight” and involved two cars. While the closest accident recorded near the proposed substation Site access occurred approximately 270 m to the east and was classified as “slight”, single car accident.

11.64 Most accidents occurred on approach to junction, where there is an increased interaction between vehicles.

11.65 Based on the information available, it has been established that there are no specific road safety issues within the immediate vicinity of the Proposed Development that currently require to be addressed or will be exacerbated by construction activities associated with the Proposed Development.

Future Baseline

11.66 Construction of the Proposed Development could commence during 2028 if consent is granted and is anticipated to take approximately 15 months.

11.67 To assess the likely effects during the construction period, 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 2028 is 1.015. This growth factor has been applied to the survey data to estimate the 2028 base traffic flows, as shown in **Table 11.7**. This is used in the Construction Peak Traffic Impact Assessment.

Table 11.7 24-hour Average Traffic Data (2028)

No.	Survey Location	Car & LGV	HGV	Total	% HGV
1	C1336, near Site Access	153	6	159	4%
2	A481, west of access to Fforest Fields	965	81	1,046	8%
3	A481, west of A481 / A44 priority junction	567	218	786	28%
4	A44, east of A481 / A44 priority junction	1,913	690	2,603	27%
5	A44, south-west of New Radnor	2,488	178	2,666	7%
6	A44, north of A481 / A44 priority junction	1,499	468	1,967	24%
7	A44, east of Crossgates	4,058	298	4,356	7%
8	A483, south of Crossgates	7,176	251	7,427	3%
9	A483, Llandrindod Wells	6,318	155	6,473	2%
10	A483, Ridgebourne	6,849	215	7,064	3%
11	A483, east of A483 / A470 roundabout	6,031	335	6,365	5%
12	A483, north of Wye Bridge	9,094	550	9,644	6%
13	A470, Aberduhonw	4,951	390	5,341	7%

No.	Survey Location	Car & LGV	HGV	Total	% HGV
14	A470, south of Erwood	5,973	356	6,329	6%
15	A470, north of A470 / A438 priority junction	3,932	251	4,184	6%

Please note minor variances due to rounding may occur.

11.68 A review of sensitive receptors has been undertaken within the Study Area. **Table 11.8** details the receptors and their sensitivities for use within the following assessment. A justification for the sensitivity has been provided, based upon the details contained in **Table 11.2**.

Table 11.8 Receptor Sensitivity Summary

Receptor	Sensitivity	Justification
C1336 (and U1377) Road Users	High	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 restrictions, traffic calming measures.
Residents along C1336 / U1377	Negligible	Where a location includes individual dwellings or scattered settlements with no facilities.
A481 Road Users	Medium	Where the road is a local A or B class road, capable of regular use by HGV traffic.
Residents along A481 (outside of villages / towns)	Negligible	Where a location includes individual dwellings or scattered settlements with no facilities.

Receptor	Sensitivity	Justification
A483 Road Users	Low	Where the road is Trunk or A-class, constructed to accommodate significant HGV composition.
Residents along A483 (outside of villages / towns)	Negligible	Where a location includes individual dwellings or scattered settlements with no facilities.
A44 Road Users	Medium	Where the road is a local A or B class road, capable of regular use by HGV traffic.
Residents along A44 (outside of villages / towns)	Negligible	Where a location includes individual dwellings or scattered settlements with no facilities.
A470 Road Users	Low	Where the road is Trunk or A-class, constructed to accommodate significant HGV composition.
Residents along A470 (outside of villages / towns)	Negligible	Where a location includes individual dwellings or scattered settlements with no facilities.
Hundred House Residents (including Fforest Fields)	Low	Where a location is a small rural settlement, few community or public facilities or services.
Builth Wells Residents (including Llanelwedd)	High	Where a location is a large rural settlement containing a high number of community and public services and facilities.

Receptor	Sensitivity	Justification
Erwood Residents	Low	Where a location is a small rural settlement, few community or public facilities or services.
Llyswen Residents	Low	Where a location is a small rural settlement, few community or public facilities or services.
Crossway Residents	Low	Where a location is a small rural settlement, few community or public facilities or services.
Llandrindod Wells Residents (including Ridgebourne)	High	Where a location is a large rural settlement containing a high number of community and public services and facilities.
Crossgates Residents	Low	Where a location is a small rural settlement, few community or public facilities or services.
PRoW / Common Land / Open Access Land Users	High	Minor paths used by walkers, cyclists and horse riders, not constructed to accommodate HGV traffic flows. Common and open access land used by walkers and for grazing, not constructed to accommodate HGV traffic flows.

11.69 Based on the indicators which are stated within the IEMA Guidelines, the villages of Hundred House, Llandegley, Penybont, Crossgates, Erwood and Llyswen and towns of Llandrindod Wells (including Ringbourne), Builth Wells (including Llanelwedd), U1377 / track users and PRoW / Common Land / Open Access Land users are identified as

sensitive receptors in this assessment. These locations will be subject to the 'Rule 2' of the IEMA Guidelines which requires a full assessment of effects if the traffic count locations are anticipated to be subject to an increase in 10% of total traffic.

11.70 All other locations within the Study Area are subject to 'Rule 1' and are assessed if traffic flows (or HGV flows) on highway links are anticipated to increase by more than 30 % as a result of the construction of the Proposed Development.

Implications of Climate Change for Existing Conditions

11.71 It is considered that climate change projections will not have a discernible effect on the baseline conditions for road traffic within the timescales of the Proposed Development.

11.72 It is assumed that, at a regional level, appropriate measures will be put in place to ensure flood risk is managed and does not have long term effects on transport infrastructure.

Future Baseline in the Absence of the Proposed Development

11.73 As noted above, the assessment has been undertaken on the basis of a future baseline of conditions in 2028, with growth factors applied. In the absence of the Proposed Development, it is anticipated that traffic growth will occur throughout the Study Area as a result of other development pressures, tourism and population flows.

Embedded Design Mitigation

11.74 The Proposed Development allows for the use of onsite borrow pits to provide material for the creation of the access tracks, hardstandings and compound and substation bases. It is estimated that these can provide sufficient material for the construction of the entire Site; however, to ensure that a robust assessment is undertaken, the assessment assumes that the borrow pits will only provide 50% of the required stone volume, with 50% of material arriving on Site from local suppliers.

Good Practice Measures

Access Junctions

11.75 The Wind Farm access of the Proposed Development will be via an upgraded simple priority access junction at the existing C1336 / U1377 priority junction. This access junction will be designed to accommodate all predicted loads and traffic for all phases of the Proposed Development.

11.76 Access to the substation element of the Proposed Development will be through an upgraded access junction on the A481, which currently comprises a gated access.

11.77 A visibility splay review has been undertaken for both of the proposed Site access junctions, which has identified limited visibility for vehicles approaching the Site accesses from certain directions, particularly due to existing roadside vegetation and alignment of the carriageway. To manage this during the construction phase, a Temporary Traffic Regulation Order (TTRO) will be required to reduce the speed limit for the entrance to the substation from the A481, and the entrance to the Site from the C1336.

11.78 With the TTRO in place, along both the A481 and the C1336, supported by appropriate signage, it is considered that the traffic at these locations can be managed accordingly, to allow for safe access and egress to and from the Site, during the construction works. The TTRO will be applied for post-consent and only implemented following the approval of PCC.

11.79 Indicative junction layouts are provided in **Appendix 11.1**.

Micrositing

11.80 The layout of the turbines, and the associated infrastructure such as tracks and cables, will be subject to 50 m micrositing allowance. The assessment of effects presented within this chapter have been based on the Proposed Development defined in **Chapter 4: Development Description**. The mitigation measures outlined in this chapter will be applicable to changes in the layout of the Proposed Development as a result of any micrositing of turbines and associated infrastructure and will adequately mitigate any adverse effects relating to access, traffic and transport.

Scope of the Assessment

Effects Assessed in Full

11.81 The EIA Scoping process, baseline conditions and professional judgement has identified the following effects for detailed assessment:

- Direct effects during construction on traffic flows in the surrounding Study Area;
- Direct effects upon local road users; and,
- Direct effects on local residents as a result of increased traffic.

11.82 Where the predicted magnitude of change to baseline conditions of roads within the Study Area meet the criteria set out in the IEMA guidance, a review of the effects on severance, driver delay, pedestrian delay, non-motorised user amenity, fear and intimidation, road safety, road safety audits and large loads has been undertaken.

Effects Scoped Out

11.83 On the basis of the desk based and field survey work undertaken, the professional judgement of the authors, experience from other relevant projects and policy guidance or standards, and feedback received from consultees, the following effects have been 'scoped out' of detailed assessment, as proposed in the Scoping Report:

- Once operational, it is envisaged that the level of traffic associated with the Proposed Development will be minimal. Regular visits will be made to the wind farm for maintenance checks. The vehicles used for these visits are likely to be 4x4 vehicles and there may also be the occasional need for an HGV to access the wind farm for specific maintenance and/or repairs. It is considered that the effects of operational traffic will be negligible and therefore no detailed assessment of the operational phase of the development is proposed.
- The traffic generation levels associated with the decommissioning phase will be less than those associated with the development phase as some elements such as access tracks will be left in place on the Site. As such, the construction phase is considered the worst-case assessment to review the effect on the Study Area. An assessment of the decommissioning phase will therefore not be undertaken, although a commitment to

reviewing the effect of this phase will be made immediately prior to decommissioning works proceeding.

Assessment of Effects

11.84 The assessment of effects identified above is based on the project description as outlined in **Chapter 4**. Unless otherwise stated, potential effects identified are considered to be negative.

Construction Effects

Predicted Construction Effects

11.85 The assessment is based upon the construction effects that may occur within the Study Area during the 15 month construction programme. In order to assess the effects, it is necessary to determine the likely traffic generation associated with the Proposed Development during the peak construction month.

11.86 During the assumed 15 month construction period, the following traffic will require access to the Site:

- Staff transport, either cars or staff minibuses;
- Construction equipment and materials (for all elements of the Proposed Development) deliveries of machinery, and supplies such as concrete raw materials;
- AILs consisting of the wind turbine components and heavy lift crane(s); and,
- Escort vehicles for AIL deliveries.

11.87 Except for the turbine components and high-capacity cranes, most traffic will be normal construction plant and will include grading tractors, excavators, forklifts and dumper trucks. Most will arrive at the Site on low loaders.

11.88 The turbines will be delivered in component sections (approximately 14 one-way movements per turbine – see **Appendix 11.1**) for ease of transport and will be assembled at the Site. The nacelle, hub, drive train, blade and tower sections are classified as AIL due to their weight and/or length, width and height when loaded. The components can be

delivered on a variety of transport platforms such as a Superwing Carrier trailer and a Clamp Tower trailer.

11.89 In addition to the turbine deliveries, two high-capacity erection cranes will be needed to offload some components and erect the turbines. One crane is likely to be a mobile crane with a capacity up to 1,000 tonnes that will be escorted by boom and ballast trucks to allow full mobilisation on Site. 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.

11.90 The resulting traffic generation profile is included in **Appendix 11.1**. The assessment is based upon an assumed construction programme for the Proposed Development, lasting 15 months. Alterations in this programme may increase or decrease traffic flows per month, however, it should be noted that the assessment is considered sufficiently robust.

11.91 The peak of construction occurs in Months 8 and 9 with 244 two-way movements per day (72 Car/Lights and 172 HGV journeys). These figures on average indicate approximately an additional 14 HGV movements per hour on the network at the peak of construction activities.

11.92 The distribution of development traffic on the network will vary depending on the types of loads being transported. The assumptions for the distribution of construction traffic during the peak months will be as follows:

- All construction traffic associated with the wind farm element will enter the main Site via the upgraded C1336 / U1377 priority junction, while all construction traffic associated with the substation element of the Proposed Development will enter the substation Site from the upgraded access junction on the A481;
- Deliveries associated with concrete materials will be sourced from local ready-mix concrete suppliers to the west of the Site;
- Whilst it is anticipated that onsite borrow pits will be able to meet up to 100% of the aggregate requirements, for the purpose of this assessment it is proposed that 50% of track and hardstanding aggregate requirements will be sourced from local quarries, which are assumed to originate from the east. The BoP contractor will confirm final

quarry and material sourcing with PCC and NMWTRA in the final Construction Traffic Management Plan (CTMP);

- HGV deliveries associated with cabling and associated materials, etc. will arrive predominantly from the south and will travel to the Site via the A483 and A44;
- Staff working at the Site are likely to be based locally. It is assumed that 35% will come from Llandrindod Wells to the north-west via the A481 and the A483, 35% will come from Kington via the A481 and the A44, 15% will come from Rhayader to the north-west via the A481 and the A470 and 15% will come from Builth Wells and the south, and will travel via the A481 and A470; and,
- General Site deliveries are assumed to arrive predominantly from the west via the A481.

11.93 For the purposes of preparing this chapter and **Appendix 11.1**, two possible AIL delivery route options have been considered, one route originates from Port of Swansea and the other route originates from Port of Birkenhead. It is anticipated that the AIL deliveries will take place in Months 10 to 14, outside of the peak of construction.

11.94 To estimate the total trips through the Study Area during the peak of the construction phase (Months 8 and 9), traffic generation was calculated for the 15-month construction programme and distributed through the network (based on traffic distribution assumptions) and combined with the 2028 baseline traffic data (see **Table 11.7**).

11.95 The resulting figures were compared with the 2028 baseline traffic to provide a percentage change in movements at each count location within the Study Area, as shown in **Table 11.9**.

Table 11.9 Peak Construction Traffic Network Impact

No.	Survey Location	Cars/LGV	HGV	Total	Cars / LGV % Increase	HGV % Increase	Total % Increase
1	C1336, near Site Access	225	178	403	47.09%	2,793.57 %	153.41%
2	A481, west of access to Fforest Fields	1,007	157	1,164	4.35%	94.19%	11.28%
3	A481, west of A481 / A44 priority junction	599	316	916	5.64%	44.87%	16.54%
4	A44, east of A481 / A44 priority junction	1,939	788	2,727	1.36%	14.20%	4.76%
5	A44, south- west of New Radnor	2,514	276	2,790	1.04%	55.20%	4.65%
6	A44, west of A481 / A44 priority junction	1,505	468	1,973	0.40%	0.00%	0.31%
7	A44, east of Crossgates	4,064	298	4,362	0.15%	0.00%	0.14%
8	A483, south of Crossgates	7,182	251	7,433	0.08%	0.00%	0.08%

No.	Survey Location	Cars/LGV	HGV	Total	Cars / LGV % Increase	HGV % Increase	Total % Increase
9	A483, Llandrindod Wells	6,350	155	6,505	0.51%	0.00%	0.49%
10	A483, Ridgebourne	6,881	215	7,096	0.47%	0.00%	0.45%
11	A483, east of A483 / A470 roundabout	6,043	349	6,391	0.20%	4.18%	0.41%
12	A483, north of Wye Bridge	9,106	564	9,670	0.13%	2.55%	0.27%
13	A470, Aberduhonw	4,963	390	5,353	0.24%	0.00%	0.22%
14	A470, south of Erwood	5,985	356	6,341	0.20%	0.00%	0.19%
15	A470, north of A470 / A438 priority junction	3,944	251	4,196	0.31%	0.00%	0.29%

11.96 The highest total traffic movement increase within the Study Area is along the C1336, near the Site Access with a total traffic increase of 153.41%. The second highest total traffic movement increase within the Study Area is anticipated along the A481, west of the A481, west of A481 / A44 priority junction, where it is estimated to increase by 16.54%. The next highest increase occurs along the A481, west of the access to Fforest Fields, where it is

estimated to increase by 11.28%. The total increase along other links within the Study Area are less than 10%, which is considered to be within daily flow variations.

11.97 The total HGV traffic movements are expected to increase by 2,793.57% (172 two-way HGV movements) on the C1336, near the Site access, by 94.19% along the A481 to the west of the access to Fforest Fields (76 two-way HGV movements), by 55.20% along the A44, south-west of New Radnor (98 two-way HGV movements) and by 44.87% along the A481, west of the A481 / A44 priority junction (98 two-way HGV movements).

11.98 Whilst these could be considered a large increase in percentage terms, it is not considered to be a significant increase when considering vehicle numbers, with the maximum average 172 HGV movements per day predicted along the C1336, equates to approximately 14 two-way HGV movements per hour over a typical 12 hour working day (assuming a flat profile).

11.99 It should be noted the construction phase is transitory in nature and the peak of construction activities is short lived, occurring over a relatively short timeframe (as shown in Table 10 Construction Traffic Profile of **Appendix 11.1**) when taking account of the whole construction programme.

11.100 A review of existing theoretical road capacity has been undertaken using The NESA 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 12-hour period that makes up the Study Area. The results are summarised in **Table 11.10**.

Table 11.10 Peak Construction Traffic Network Impact

No.	Survey Location	2028 Baseline Flow (total traffic)	2028 Base + Development Flows (total traffic)	Theoretical Road Capacity (12hr)	Spare Road Capacity %
1	C1336, near Site Access	159	403	19,200	98%

No.	Survey Location	2028 Baseline Flow (total traffic)	2028 Base + Development Flows (total traffic)	Theoretical Road Capacity (12hr)	Spare Road Capacity %
2	A481, west of access to Fforest Fields	1,046	1,164	21,600	95%
3	A481, west of A481 / A44 priority junction	786	916	28,800	97%
4	A44, east of A481 / A44 priority junction	2,603	2,727	28,800	91%
5	A44, south-west of New Radnor	2,666	2,790	21,600	87%
6	A44, west of A481 / A44 priority junction	1,967	1,973	21,600	91%
7	A44, east of Crossgates	4,356	4,362	28,800	85%
8	A483, south of Crossgates	7,427	7,433	28,800	74%
9	A483, Llandrindod Wells	6,473	6,505	19,200	66%
10	A483, Ridgebourne	7,064	7,096	19,200	63%
11	A483, east of A483 / A470 roundabout	6,365	6,391	19,200	67%
12	A483, north of Wye Bridge	9,644	9,670	19,200	50%

No.	Survey Location	2028 Baseline Flow (total traffic)	2028 Base + Development Flows (total traffic)	Theoretical Road Capacity (12hr)	Spare Road Capacity %
13	A470, Aberduhonw	5,341	5,353	28,800	81%
14	A470, south of Erwood	6,329	6,341	28,800	78%
15	A470, north of A470 / A438 priority junction	4,184	4,196	21,600	81%

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

11.102 In accordance with IEMA Guidelines 1 and 2, detailed assessments have been undertaken on the following receptors as construction traffic impacts were assessed to be over 30% increase in total flows/HGV traffic flows (as detailed in the Assessing Significance – Magnitude section earlier in this chapter):

- Users of the C1336, near the Site Access;
- Residents / visitors along the C1336 / U1377;
- Users of the A481;
- Residents / visitors along the A481;
- Hundred House (including Fforest Fields);
- Users of A44, south-west of Radnor;
- Residents / visitors along the A44, south-west of Radnor; and
- PRoW path / Common Land and Open Access Land users.

11.103 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.

Assessment of Effects

11.104 The significance of the potential effects on the above receptors has been determined using the rules and thresholds previously outlined in the Assessing Significance section. **Table 11.11** summarises the significance on the receptors for the construction phase prior to additional mitigation measures being applied.

Table 11.11 Construction Phase Effects Summary

Receptors	Potential Effect	Magnitude	Significance	Comment
Residents / visitors and users of the C1336 (and U1377), near the Site Access	Severance	Major	Major (Significant)	The maximum increase in HGV traffic is anticipated to be 2,793.57% and the overall increase in traffic is forecast to be 153.41%. The effect of severance is therefore considered to be major .
	Driver Delay	Moderate	Major / Moderate (Significant)	There is ample spare capacity along the existing link road, however the road is narrow. Therefore, the effect on driver delay is considered to be moderate .
	Pedestrian Delay	Moderate	Major / Moderate (Significant)	There are no pedestrian facilities located along the C1336 within the Study Area, therefore the effect on pedestrian delay is considered moderate .
	Non-motorised User Amenity	Major	Major (Significant)	A section of NCN Route 825 runs along the C1336 and passes the Site access junction. Therefore, the effect on non-motorised user amenity is considered major .

Receptors	Potential Effect	Magnitude	Significance	Comment
	Fear and Intimidation	Major	Major (Significant)	The maximum increase in HGV traffic is anticipated to be 2,793.57% and the overall increase in traffic is forecast to be 153.41%. The effect of fear and intimidation is therefore considered to be major .
	Road Safety	Moderate	Major / Moderate (Significant)	One accident occurred on the C1336 and was categorised as being “slight”. Therefore, the effect on pedestrian delay is considered moderate .
	Large Loads	Major	Major (Significant)	It is anticipated that the Proposed Development will require 198 AILs 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 major .
Residents / visitors and users of the A481, as well as Hundred	Severance	Minor	Minor (Not significant)	The maximum increase in HGV traffic recorded along the A481 is anticipated to be 94.19% to the west of Fforest Fields and the maximum increase in traffic is forecast to be 16.54% to the west of the A481 / A44 priority junction. The effect of severance is therefore considered to be minor.

Receptors	Potential Effect	Magnitude	Significance	Comment
House (including Fforest Fields)	Driver Delay	Minor	Minor (Not significant)	There is ample spare capacity along the existing link road. Therefore, the effect on driver delay is considered to be minor.
	Pedestrian Delay	Minor	Minor (Not significant)	There are no pedestrian facilities located along the A481 within the Study Area, outside of a small section within Hundred House and Llanelwedd, therefore the effect on pedestrian delay is considered minor.
	Non-motorised User Amenity	Minor	Minor (Not significant)	A section of NCN Route 825 runs along the A841. The speed limit along this section of A-road is 40 mph. The effect on non-motorised user amenity is considered minor.
	Fear and Intimidation	Minor	Minor (Not significant)	The maximum increase in HGV traffic recorded along the A481 is anticipated to be 94.19% to the west of Fforest Fields and the maximum increase in traffic is forecast to be 16.54% to the west of the A481 / A44 priority junction. The effect of fear and intimidation is therefore considered to be minor.
	Road Safety	Minor	Minor (Not significant)	A total of 12 PIAs were recorded along the A481 within the most recently available five-year period. There were no accidents recorded

Receptors	Potential Effect	Magnitude	Significance	Comment
				in the vicinity of the A481 / C1366 junction. The effect of road safety is considered to be minor.
	Large Loads	Major	Major (Significant)	It is anticipated that the Proposed Development will require 198 AILs 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 major .
Residents / visitors and Users of A44, south-west of Radnor	Severance	Minor	Minor (Not significant)	The maximum increase in HGV traffic recorded along the A44 is anticipated to be 55.20% to the south-west of Radnor. The effect of severance is therefore considered to be minor.
	Driver Delay	Minor	Minor (Not significant)	There is ample spare capacity along the existing link road. Therefore, the effect on driver delay is considered to be minor.
	Pedestrian Delay	Minor	Minor (Not significant)	There no pedestrian facilities located along the A44 within the Study Area to the east of Fforest Inn, outside of a small section through Walton, therefore the effect on pedestrian delay is considered minor.

Receptors	Potential Effect	Magnitude	Significance	Comment
	Non-motorised User Amenity	Minor	Minor (Not significant)	Outside of Walton there are no non-motorised user facilities along the A44 within the Study Area to the east of Fforest Inn. The effect on non-motorised user amenity is considered minor.
	Fear and Intimidation	Minor	Minor (Not significant)	The maximum increase in HGV traffic recorded along the A44 is anticipated to be 55.20% to the south-west of Radnor. The effect of severance is therefore considered to be minor.
	Road Safety	Moderate	Moderate (Significant)	The horizontal alignment of the A44 comprises lots of bends. While this road has not been reviewed in the PIA review, CrashMap shows that accidents have been recorded along bends on the A44 and these accidents have included fatalities. The effect of road safety is considered to be moderate .
	Large Loads	Major	Major (Significant)	It is anticipated that the Proposed Development will require 198 AILs 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 major .

Receptors	Potential Effect	Magnitude	Significance	Comment
PRoW network / Common Land and Open Access Land users	Severance	Major	Major (Significant)	The presence of construction traffic associated with the Proposed Development, 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 is therefore considered to be major .
	Driver Delay	N/A	N/A	N/A
	Pedestrian Delay	Moderate	Major / Moderate (Significant)	Pedestrians could experience delays if their movements interact with construction traffic along the PRoW network, Common Land and Open Access Land which will not be experienced prior to the construction period. The effect is therefore considered moderate .
	Non-motorised User Amenity	Major	Major (Significant)	The presence of traffic flows along a location where there would have been no traffic prior to the construction phase could affect the amenity of the PRoW network, Common Land and Open Access Land for users. The effect is therefore considered major .
	Fear and Intimidation	Major	Major (Significant)	The presence of construction traffic associated with the Proposed Development, over a prolonged period of time within the Site where

Receptors	Potential Effect	Magnitude	Significance	Comment
				there was previously minimal traffic could lead to severance of the path network. The effect is therefore considered to be major .
	Road Safety	Moderate	Major / Moderate (Significant)	There is potential to impact the safety of the PRow network, Common Land and Open Access Land users interacting with construction delivery vehicles. The effect is therefore considered moderate .
	Large Loads	Major	Major / Moderate (Significant)	There is potential to impact the safety of the PRow network, Common Land and Open Access Land users interacting with AIL delivery vehicles. The effect is therefore considered major .

11.105 The assessment identifies that total traffic flows residents / visitors and users of the C1336 (and U1377) near the Site Access and users of the PRoW network / Common Land and Open Access during peak construction works are considered to result in significant adverse effects, prior to the application of additional mitigation measures.

11.106 The assessment of significance also identifies that residents / visitors and users of the A481, as well as Hundred House (including Fforest Fields) may experience significant adverse effects relating to large loads and residents / visitors and Users of A44, south-west of Radnor may experience significant adverse effects relating to road safety and large loads. All other effects on these receptors are considered to be not significant.

11.107 It should be noted that the effects relate solely to the peak of construction activities (Months 8 and 9), and that the construction period is short lived and the effects transitory in nature. The assessment is also considered robust as the assessment assumes that 50% of aggregate materials for hardstandings and tracks will be delivered to Site which accounts for approximately half of the HGV movements included in the assessment. It is expected that onsite borrow pits will be able to provide 100% of these requirements, thus reducing the number of HGV movements within the Study Area to that assessed.

Committed Additional Mitigation

Outline Construction Traffic Management Plan (CTMP)

11.108 The following measures will be implemented during the construction phase through the CTMP, to be secured via an appropriately worded planning condition. It should be noted that the final CTMP will be developed in consultation with PCC Highways Authority.

- Agree AIL route modifications and improvements with PCC, NMWTRA and other relevant stakeholders.
- Where possible the detailed design process will minimise the volume of material to be imported to site to help reduce HGV numbers.
- Where necessary, a site worker Staff Travel Plan, including transport modes to and from the worksite (including pick up and drop off times) will be prepared.
- Information regarding AIL deliveries.

- 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 PCC.
- Unless otherwise agreed with the roads authorities, normal site working hours will be limited to between 0700 and 1900 Monday to Friday and 0700 and 1300 Saturday though component delivery, foundation pours, and turbine erection may take place outside these hours. No work is proposed on Sundays and public holidays unless otherwise agreed with the Local Planning Authorities.
- Appropriate traffic management measures will be put in place on the A44 leading through to the Site, to avoid conflict with general traffic, subject to the agreement of PCC. 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 speed limit of 15 mph through towns and villages for HGV construction traffic. Site-specific speed limits will be adhered to within the Site.
- All drivers will be required to attend an induction to include:
 - A tool box 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,
 - Identification of the required access routes and the controls to ensure no departure from these routes.

Offsite Mitigation

11.109 PCC may request that an agreement to cover the cost of abnormal wear on the A481 and C1336 is made. If required, provisions for this will be detailed within the CTMP and any necessary agreements will be entered into.

11.110 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 the relevant authority. Any damage caused by traffic associated with the Proposed Development during the construction period that will be hazardous to public traffic will be repaired immediately.

11.111 Damage to road infrastructure caused directly by construction traffic arising from the Proposed Development will be repaired and street furniture that is removed on a temporary basis will be fully reinstated.

11.112 There will be a regular road and road edge review, which will include the areas within the highway boundary and any debris and mud will be removed from the public highway to keep the road clean and safe during the initial months of construction activity, until the site entrance and immediate access track works are complete. Before the AILs traverse the chosen transport route, the following tasks will be undertaken to ensure load and road user safety:

- Ensure any vegetation that 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)

11.113 A detailed Abnormal Load Transport Management Plan will be prepared to cater for all movements to and from the Proposed Development post-consent and will be secured by an

appropriately worded planning condition. An outline TMP is included as **Appendix 11.2**. Upon confirmation of the candidate turbine, the finalised TMP will include the following further details:

- Procedures for liaising with the emergency services to ensure that police, fire and ambulance vehicles are not impeded by the loads. This is normally undertaken by informing the emergency services of delivery times and dates and agreeing communication protocols and lay over areas to allow overtaking.
- A diary of proposed delivery movements will be used to liaise with the communities to avoid key dates, such as the Royal Welsh Show and other local events that could be affected.
- A protocol for working with local businesses to ensure the construction traffic does not interfere with deliveries, normal business traffic or school traffic.
- Proposals to establish a construction liaison committee to ensure the smooth management of the project / public interface with the Applicant, the construction contractors, the local community, and if appropriate, the police forming the committee. This committee will form a means of communicating and updating on forthcoming activities and dealing with any potential issues arising.

Onsite Measures Delivered Using a Path Management Plan (PaMP)

11.114 It is recognised that it will be necessary to divert tracks, paths or PRowWs, either temporarily or permanently, for both the construction and operational phases of the Proposed Development. A PaMP is to be secured by planning condition and will be developed in consultation with PCC and other relevant stakeholders. The PaMP will establish the extent and location of diversions that will be necessary and will be confirmed following the micro-siting exercise post-consent. The temporary and permanent diversions will be secured through the appropriate processes to secure the requisite consents to facilitate them. It should be noted that there is sufficient land within the Site to accommodate any necessary diversions.

11.115 The PaMP will include:

- Proposals to establish a construction liaison committee to ensure the smooth management of the project/public interface with the Applicant, the construction contractors, the local community, and if appropriate, the police forming the committee. This committee will form a

means of communicating and updating on forthcoming activities and dealing with any potential issues arising;

- Details of temporary closures that may be needed and whether alternative routes can be provided;
- Details outlining the management of temporary accommodation work affecting rights of way and access;
- Measures to manage the risks associated with construction traffic encountering members of the public, especially where the room for avoidance is limited;
- Public information including legal and advisory signage; and,
- Plans for the reinstatement of public paths.

11.116 Within the PaMP, consideration will be given to pedestrians, cyclists and horse riders alike due to potential interactions between construction traffic and users of the PRoW network, Common Land and Open Access Land as well as users of tracks within the Site during the construction and operational phase. Appropriate measures will be formulated into a PaMP.

11.117 The Principal Contractor will ensure that speed limits are always adhered to by their drivers and associated subcontractors. This is particularly important within proximity to the PRoW network, Common Land and at crossing points. Advisory speed limit signage will also be installed on approaches to areas where PRoW users may interact with construction traffic.

11.118 Signage will be installed on the Site exit that makes drivers aware of local speed limits and reminding drivers of the potential presence of pedestrians, cyclists, equestrians and users of the tracks in the area, as well as the potential presence of animals. This will also be emphasised in weekly toolbox talks.

11.119 Users of the PRoWs will be separated from construction traffic using barriers (where permitted and appropriate) which will ensure that safe access to the Site for recreational purposes will be maintained. Crossing points will be provided where required, with path users having right of way and diversions will be provided where necessary. It should be noted that any necessary temporary diversions (during the construction phase) or permanent diversions

(during the construction and operational phase) to the PRow network will be discussed and agreed with PCC. The diversions will be applied for through a separate consent.

11.120 Appropriate Traffic Signs Manual Chapter 8 compliant temporary road signage will be provided to assist at these crossings for the benefit of all users.

11.121 The British Horse Society (BHS) recommendations on the interactions between HGV traffic and horses state that horses are normally nervous of large vehicles, particularly when they do not often meet them. Horses are flighty 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.

11.122 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.

11.123 The BHS recommends 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 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.

- All drivers delivering to the Site must be patient. Riders will be doing their best to reassure their horses while often feeling a high degree of anxiety themselves.
- Discussions with local equestrian groups will be held during the construction period to keep riders informed of works and activities. These discussions will also allow the contractors to tailor their toolbox talks to specific equestrian issues.

A Staff Travel Plan

11.124 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;
- Provision of public transport information;
- Mini-bus service for transport of site staff;
- Promotion of a car sharing scheme; and
- Car parking management.

11.125 The requirement for the Staff Travel Plan will be secured by an appropriately worded planning condition, if deemed necessary by PCC.

Public Information

11.126 Information on the turbine convoys will be provided to local media outlets to help assist the public. These could include:

- Local newspapers;
- Online media outlets;
- Community Councils; and
- PCC website.

11.127 Information will relate to expected vehicle movements from the PoE through to the Site access junction. This will assist residents becoming aware of the convoy movements and may help reduce any potential conflicts.

Off Site Mitigation

11.128 It is anticipated that an agreement on wear and tear on road infrastructure caused directly by construction traffic will be established prior to construction commencing. The agreement will set out the area of review, scope and response requirement of any dilapidations that can be proven to be linked to construction traffic.

11.129 Any temporary road changes required to facilitate the movement of AILs will be agreed with the appropriate roads' authority.

Strategic Recreation Framework

11.130 A Strategic Recreation Framework will also be submitted with the DNS application, which sets out proposals of how access to and across the Site for recreation could be enhanced. This is an aspirational document therefore the proposals therein are not considered as mitigation within this assessment.

Residual Construction Effects

11.131 The identification of residual construction effects considers the assessment of traffic impacts following the incorporation of the identified committed additional mitigation measures. An evaluation of the potential effects of the temporary increase in traffic on the Study Area roads used for the construction traffic has been undertaken. To avoid repetition below, the summary of this assessment of residual effects is presented in **Table 11.12**.

Cumulative Effects During Construction

Predicted Cumulative Effects During Construction

11.132 The use of NRTF low growth assumptions has provided a basis for general local development growth within the Study Area.

11.133 Only committed developments (i.e. those with planning approval) are included in the cumulative assessment in line with good practice for transport planning projects. The review of PCC online planning portal and PEDW's DNS Casework portal was undertaken to determine which committed developments should be considered in the assessment. The review did not

establish any consented developments whose trips are considered significant in scale (i.e. has associated traffic impact of over 10%).

11.134 Projects in Scoping or not yet determined cannot be included in cumulative assessments in the transport assessments as they have yet to be determined. As traffic impacts are short lived for construction projects, the potential traffic impact is highly speculative for these projects and as such, cannot be included in the assessment.

11.135 Any effects of the multiple sites being constructed at the same time will be mitigated using 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.

11.136 Further details of the review are presented in **Appendix 11.1**.

11.137 It is therefore considered that there will be no cumulative transport or access effects predicted as part of the Proposed Development.

Summary of Effects

11.138 Table 11.12 below summarises the predicted residual effects of the Proposed Development on Transport and Access, following implementation of the additional mitigation.

Table 11.12 Construction Phase Effects Summary

Predicted Effect	Sensitivity	Magnitude	Significance	Mitigation	Significance of Residual Effect
Residents / visitors and users of the C1336 (and U1377), near the Site Access					
Severance	High	Major	Major (Significant)	CTMP – Temporary signage/route signage	Minor (Not significant)
Driver Delay	High	Moderate	Major / Moderate (Significant)	CTMP – Temporary signage/route signage	Minor (Not significant)
Pedestrian Delay	High	Moderate	Major / Moderate (Significant)	CTMP – Temporary signage/route signage	Minor (Not significant)
Non-motorised User Amenity	High	Major	Major (Significant)	CTMP – Temporary signage/route signage	Minor (Not significant)

Predicted Effect	Sensitivity	Magnitude	Significance	Mitigation	Significance of Residual Effect
Fear and Intimidation	High	Major	Major (Significant)	CTMP – Temporary signage/route signage	Minor (Not significant)
Road Safety	High	Moderate	Major / Moderate (Significant)	CTMP – Temporary signage/route signage	Minor (Not significant)
Large Loads	High	Major	Major (Significant)	AIL TMP	Minor (Not significant)
Residents / visitors and users of the A481, as well as Hundred House (including Fforest Fields)					
Large Loads	Medium	Major	Major (Significant)	AIL TMP	Minor (Not significant)
Residents / visitors and Users of A44, south-west of Radnor					

Predicted Effect	Sensitivity	Magnitude	Significance	Mitigation	Significance of Residual Effect
Road Safety	Medium	Moderate	Moderate (Significant)	CTMP – Temporary signage/route signage	Minor (Not significant)
Large Loads	Medium	Major	Major (Significant)	AIL TMP	Minor (Not significant)
PRoW network / Common Land and Open Access Land users					
Severance	High	Major	Major (Significant)	CTMP – Temporary signage/route signage and PaMP	Minor (Not significant)
Pedestrian Delay	High	Moderate	Major / Moderate (Significant)	CTMP – Temporary signage/route signage and PaMP	Minor (Not significant)

Predicted Effect	Sensitivity	Magnitude	Significance	Mitigation	Significance of Residual Effect
Non-motorised User Amenity	High	Major	Major (Significant)	CTMP – Temporary signage/route signage and PaMP	Minor (Not significant)
Fear and Intimidation	High	Major	Major (Significant)	CTMP – Temporary signage/route signage and PaMP	Minor (Not significant)
Road Safety	High	Moderate	Major / Moderate (Significant)	CTMP – Temporary signage/route signage and PaMP	Minor (Not significant)
Large Loads	High	Major	Major / Moderate (Significant)	CTMP – Temporary signage/route signage and PaMP	Minor (Not significant)