

Contents

12.	Traffic and Transport	3
12.1	Introduction	3
	Limitations and assumptions	3
12.2	Relevant legislation, planning policy and technical guidance	4
	Legislation	4
	Planning policy	4
	Technical guidance	7
12.3	Consultation and engagement	7
	Overview	7
	Scoping Direction	7
	Technical Engagement	9
12.4	Data gathering methodology	9
	Study area	9
	Desk study	10
12.5	Overall baseline	11
	Current baseline	11
	Future baseline	18
12.6	Embedded measures	18
12.7	Scope of the assessment	20
	The Proposed Development	20
	Spatial scope	21
	Potential receptors	21
	Likely significant effects	22
	Effects scoped out	22
12.8	Assessment methodology	23
	Methodology for the prediction of effects	23
	General approach	23
	Environmental effects assessed	23
	Receptor sensitivity	24
	Magnitude of change	25
	Significance criteria	26
12.9	Assessment of Traffic and Transport effects	27
	Sensitivity of highway links	27
	Construction traffic	27
	Construction traffic distribution	29
	Construction effects	30
12.10	Assessment of cumulative (inter-project) effects	31
12.11	Significance conclusions	32

Table 12.1 Planning policy relevant to the Traffic and Transport assessment	4
Table 12.2 Technical guidance relevant to the Traffic and Transport assessment	7
Table 12.3 Summary of EIA Scoping Direction responses for Traffic and Transport	8
Table 12.4 Data sources used to inform the Traffic and Transport assessment	11
Table 12.5 2019 baseline traffic flow (two-way)	14
Table 12.6 2022 baseline traffic flow (two-way)	14
Table 12.7 Summary of recorded PIAs in proximity of the Site (Headed North from site access)	15
Table 12.8 Summary of recorded PIAs in proximity of the Site (Headed South from site access)	16
Table 12.9 2026 Future Baseline traffic flow (two-way) – 12hr	18
Table 12.10 Summary of the embedded environmental measures relevant to Traffic and Transport	19
Table 12.11 Traffic and Transport receptors scoped in for further assessment	22
Table 12.12 Receptor sensitivity	25
Table 12.13 Magnitude of change	26
Table 12.14 Significance evaluation matrix	26
Table 12.15 Sensitivity of highway links (baseline situation)	27
Table 12.16 Predicted traffic generation during total 101-week construction phase	28
Table 12.17 Distribution of construction traffic	30
Table 12.18 Forecast baseline traffic 2026 with predicted construction traffic	30

12. Traffic and Transport

12.1 Introduction

- 12.1.1 This chapter presents the preliminary assessment of the likely significant effects of the Project with respect to Traffic and Transport, including consultation, baseline conditions, embedded measure and the assessment of the likely Traffic and Transport effects. The preliminary assessment is based on information obtained to date. It should be read in conjunction with the Project description provided in **Chapter 4: Description of the Project** and with respect to relevant parts of the following chapters:
- **Chapter 13: Noise**, where common receptors have been considered and where there is an overlap or relationship between the assessment of effects.
- 12.1.2 An Abnormal Indivisible Loads (AIL) access study and a Draft Construction Traffic Management Plan (CTMP) have been prepared to support this chapter. The AIL access study and Draft CTMP are presented respectively in **Appendix 12A** and **12B**.
- 12.1.3 This chapter describes:
- the legislation, policy and technical guidance that has informed the assessment (**Section 12.2**);
 - consultation and engagement that has been undertaken and how comments from consultees relating to Traffic and Transport have been addressed (**Section 12.3**);
 - the methods used for baseline data gathering (**Section 12.4**);
 - the current and future baseline conditions (**Section 12.5**);
 - embedded measures relevant to Traffic and Transport (**Section 12.6**);
 - the scope of the assessment for Traffic and Transport (**Section 12.7**);
 - the methods used for the assessment (**Section 12.8**);
 - the assessment of Traffic and Transport effects (**Section 12.9**);
 - the assessment of cumulative (inter-project) effects (**Section 12.10**); and
 - a summary of the significance conclusions (**Section 12.11**).

Limitations and assumptions

- 12.1.4 This Draft ES has been produced to fulfil the Applicant's consultation duties and enable consultees to develop an informed view of the likely significant effects of the Proposed Development.
- 12.1.5 This chapter has been prepared with the assumption that the proposed temporary construction vehicle access from the A4233 Trebanog Road, as set out in the formal pre-app request to Rhondda Cynon Taf Borough County Council is acceptable in principle. The formal Highways response states a requirement for *"Details of the proposed access from the A4233 incorporating a right-hand turning lane to accommodate normal HGV deliveries, vision splays in accordance with TAN 18 and including details of any temporary traffic management, Stage 1 / 2 Road Safety Audit and details of removal of access/reinstatement of highway and verge if applicable."*

12.2 Relevant legislation, planning policy and technical guidance

- 12.2.1 This section identifies the legislation, planning policy and technical guidance that has informed the assessment of effects with respect to Traffic and Transport. Further information on policies relevant to the Project is provided in **Chapter 5: Legislation and policy overview**.

Legislation

- 12.2.2 There is no specific legislation that needs to be considered when determining the scope of this assessment.

Planning policy

- 12.2.3 A summary of the relevant national and local planning policy is given in **Table 12.1**.

Table 12.1 Planning policy relevant to the Traffic and Transport assessment

Policy/Legislation	Policy context
National planning policy	
Planning Policy Wales, Edition 11, Welsh Government (2021)¹	<p>5.3 Transportation Infrastructure This section outlines the need to ensure any new transport infrastructure has minimal adverse impacts including expectation that routing takes into account various impacts including safety and noise.</p> <p>Strategic Road Network This includes policy that development plans should cover the road network hierarchy and any associated network improvements or new schemes. It also states that where possible site access should not be onto a primary road and should be onto a secondary road; and that the type of access should reflect the road and traffic characteristics and incorporate good junction design.</p> <p>Freight This section outlines the expectation that development plans and local authorities should consider the most appropriate routes for freight movements where this is necessary by road rather than, the encouraged, rail and water movements.</p>
Llwybr Newydd The Wales Transport Strategy (2021)²	<p>Priority 2 an efficient, sustainable and accessible transport system including safe and efficient use of current infrastructure</p> <p>Mini Plan 7.4 This plan outlines priorities and aims for the road and streets including ensuring the Strategic Road Network has minimal environmental impacts, roads work efficiently and with reduced congestion and that the network is safe, with fewer incidents, for all users.</p> <p>Mini Plan 7.7 This plan covers priorities for freight movements including a desire to shift freight movements away from the road network, decarbonise the sector and contribute to the aim of a safe transport network for all users with reduced impact on the environment.</p>

¹ Welsh Government (2021). Planning Policy Wales (Online). Available at: https://gov.wales/sites/default/files/publications/2021-02/planning-policy-wales-edition-11_0.pdf (Accessed September 2022).

² Welsh Government (2021). The Wales Transport Strategy (Online). Available at: <https://gov.wales/llwybr-newydd-wales-transport-strategy-2021> (Accessed September 2022).

Policy/Legislation	Policy context
Future Wales: The National Plan 2040 (2021)³	<p>This document sets out the national development framework for Wales to 2040. One of the desired outcomes is sustainable transport. Another involves achieving efficient transport infrastructure and a third involves investment in public and active travel.</p> <p>Policies 11 and 12 cover national and regional transport connectivity policy.</p>
The Wales Freight Strategy Freight Strategy (2008)⁴	<p>This document sets out the freight strategy for Wales outlining aims and policies across multiple modes. It includes three key themes of measures for: reducing demand for freight movements, modal shift from road to rail/sea and making efficient use of the existing network. It outlines that road freight is a less preferred option due to some of the road network not being suited to freight movements. However, the Strategy recognises that sometimes the use of the road network for freight transport is the only option available.</p> <p>The Strategy focuses on ‘steps towards delivery’ overall and for each mode, there are 9 road steps including the need to improve the efficiency of road freight, consideration of parking and identifying of strategic routes for freight. These 9 road steps are to contribute to various outcomes including those relating to safety, severance/intimidation and environmental impacts along with economic benefits.</p>

Regional Planning Policy

South-East Wales Valleys, Local Transport Plan (2015)⁵	<p>The five South East Wales Valleys local authorities of Blaenau Gwent, Caerphilly, Merthyr Tydfil, Rhondda Cynon Taf and Torfaen jointly developed this Local Transport Plan (LTP). The LTP programme provides details of the transport schemes and aspirations of the SE Wales Valleys local authorities at the current time.</p> <p>Vision: The Plan’s vision is a ‘modern, accessible, integrated and sustainable transport system’ through active and sustainable travel including sustainable freight movements.</p> <p>Objectives 1, 2, 7, 8 and 10: These objectives aim to reduce road traffic casualties; improve travelling security; reduce traffic growth and congestion by utilising the road system efficiently; increase sustainable freight transport and to reduce the impact of transport on local areas.</p> <p>Issues 12, 13, A and B: The key relevant issue of concern in this plan covers congestion levels, the inadequacy of freight routes on the strategic network, pollutions from transport and highway accident levels.</p> <p>The LTP plan identifies specific areas of interest within Rhondda Cynon Taf Council Borough that are due improvements such as:</p> <ul style="list-style-type: none"> - the A470 / A4059 which is pinned for junction modification measures to control traffic flows; - improvements to bus stop accessibility provision along Porth – Trebanog – Tonyrefail and Gilfach Goch;
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³ Welsh Government. (2021). Future Wales: The National Plan 2040 (Online) Available at: <https://gov.wales/future-wales-national-plan-2040-0> (Accessed September 2022).

⁴ Welsh Government. (2008). The Wales Freight Strategy. (Online) Available at: <https://gov.wales/wales-freight-strategy> (Accessed August 2022).

⁵ Rhondda Cynon Taf County Borough Council, et al., (2015). South East Wales Valleys Local Transport Plan January 2015. (Online) Available at: [South-East-Wales-Valleys-Local-Transport-Plan.pdf \(torfaen.gov.uk\)](https://www.torfaen.gov.uk/South-East-Wales-Valleys-Local-Transport-Plan.pdf) (Accessed September 2022)

Policy/Legislation	Policy context
	<ul style="list-style-type: none"> - A park and ride scheme adjacent to the B4264 in Miskin near Talbot Green; - A new single carriageway relief road bypassing the A4058 and A4061 which may offer increased capacity on the A4058; - A relief road for the A4119-A473 between the Upper Ely Valley and Talbot Green which may alleviate capacity on the A4119; and - Junction improvements to the A4119 junction with Castell Mynach, just before as the A4119 approaches the M4.

Local Planning Policy

Rhondda Cynon Taf County Borough Council (RCTCBC) Adopted Local Development Plan up to 2021 Adopted March 2011⁶

Policy CS 8 - Transportation

Improvements to the strategic transportation network in Rhondda Cynon Taf will be secured through a combination of the following: -

a) The safeguarding and provision of land for the improvement of the strategic highway network, including development of: -

1. The Geli Trechory Relief Road;
2. The Ynysmaerdy to Talbot Green Relief Road;
3. The A4059 Aberdare Bypass Extension, and
4. A465 Abergavenny / Hirwaun Dualling.

b) The implementation of a strategic Transport corridor management system in the following areas;

1. A4119 / A473 corridor;
2. A470 / A4059 corridor, and
3. A4049 / A465 corridor.

Policy AW 5 - New Development

Development proposals will be supported where: -

2) Accessibility

c) The development would have safe access to the highway network and would not cause traffic congestion or exacerbate existing traffic congestion;

Policy AW 13 - Large Wind Farm Development

Proposals for wind farm developments of 25MW and over or capable of accommodating 25MW or over will be permitted where it can be demonstrated that the proposal:

5. Will minimise any loss of, and where possible enhance public accessibility to the countryside.

Where development proposals are acceptable applicants will be required to enter into and implement appropriate land management agreements

Policy SSA 18 - Major Road Schemes

In addition to those schemes identified in Policy CS 8 land will be safeguarded and provision made for the development of the strategic highway network in the Southern Strategy Area, including:

⁶ Rhondda Cynon Taf County Borough Council. (2011). Rhondda Cynon Taf Local Development Plan up to 2021 Adopted March 2011. (Online). Available at: <https://www.rctcbc.gov.uk/EN/Resident/PlanningandBuildingControl/LocalDevelopmentPlans/RelateddocumentsLDP20062021/AdoptedLocalDevelopmentPlan.pdf> (Accessed September 2022)

Policy/Legislation	Policy context
	<ol style="list-style-type: none"> 1. A473 Llanharan Bypass, and 2. A473 Talbot Green Bypass Dualling. <p>Policy SSA 21 - Cycle Network Improvements The existing network of cycle paths and community routes will be extended, improved and enhanced to include schemes at:</p> <ol style="list-style-type: none"> 1. Treforest Connect 2; 2. Extension of Connect 2 scheme to Pontypridd; 3. Maesycloed to Porth; 4. Glyntaff to Nantgarw; 5. Trallwn to Cilfynydd; 6. Pontypridd to Tonyrefail via Llantrisant, and 7. Gyfeillion to Llanwonno route

Technical guidance

12.2.4 A summary of the technical guidance for Traffic and Transport is given in **Table 12.2**.

Table 12.2 Technical guidance relevant to the Traffic and Transport assessment

Technical guidance document	Context
Guidelines for the Environmental Assessment of Road Traffic (GEART)⁷ (Institute of Environmental Assessment, 1993).	Provides the framework for assessment of road traffic on the environment

12.3 Consultation and engagement

Overview

12.3.1 The assessment has been informed by consultation responses and ongoing stakeholder engagement. An overview of the approach to consultation is provided in **Section 2.4 of Chapter 2: Approach to preparing the Environmental Statement**.

Scoping Direction

12.3.2 A Scoping Direction was issued by the Planning and Environment Decisions Wales (PEDW, formerly Planning Inspectorate Wales), on behalf of the Welsh Ministers, on 01 December 2021. A summary of the relevant responses received in the Scoping Opinion in relation to Traffic and Transport, and confirmation of how these have been addressed within the assessment to date is presented in **Table 12.3**.

⁷ Institute of Environmental Assessment (IEA). (1993). Guidelines for the Environmental Assessment of Road Traffic (GEART). IEA; Lincoln, UK.

Table 12.3 Summary of EIA Scoping Direction responses for Traffic and Transport

Consultee	Consideration	How scoping response has been addressed in this ES
Rhondda Cynon Taf County Borough Council (RCTCBC)	<p>The following should be submitted as part of any planning application: -</p> <ul style="list-style-type: none"> • Transport Statement. • Details of abnormal load and delivery route for large components of the wind turbine. • Delivery route for other Heavy Goods Vehicles. • Swept Path Analysis of haulage routes. • Temporary mitigation measures where required and subsequent reinstatements. • Dry run prior to the commencement of the development to ensure that transport of large components is achievable. • Confirmation as to whether the proposed access would be temporary or retained to service the wind farm for routine maintenance. • Details of the proposed access from the A4233 incorporating a right-hand turning lane to accommodate normal HGV deliveries, vision splays in accordance with TAN 18 and including details of any temporary traffic management, Stage 1 / 2 Road Safety Audit and details of removal of access/reinstatement of highway and verge if applicable. <p>Notes:</p> <ul style="list-style-type: none"> • Construction of the access and any works within the existing highway would need to be undertaken under a legal agreement (S278 of the Highways Act 1980), supported by a bond. • Works to deliver duelling of the A4119 between Ynysmaerdy and Coed Ely, commencing August 2022 with estimated completion 2024 which may impact the proposed scheme and change the highway alignment which would need to be considered within the assessment of the routes for abnormal loads. • The developer should also be advised that the Welsh Government and this Council would require a Traffic Management Plan (TMP) at planning application stage. 	<ul style="list-style-type: none"> - This document represents the Transport Statement for the full Environmental Impact Assessment for the planning application. - An AIL study is being prepared detailing the delivery loads for the large wind turbine components including blades. - This document references the CTMP which will document all the HGV route options for all other construction vehicles. - Swept Path Analysis has been conducted within an AIL Study. - Dry run can be trailed once a haulier has been appointed post planning permission.. - The proposed access will be retained for routine maintenance post the temporary construction period. - Drawings for the proposed temporary construction vehicle access including the required right hand turning lane have been prepared. <p>Notes:</p> <ul style="list-style-type: none"> • Noted. • The proposed wind farm development construction will commence after the A4119 duelling works are completed. • A standalone CTMP and AIL Study has been prepared in addition to this chapter.

Consultee	Consideration	How scoping response has been addressed in this ES
Planning and Environment Decisions Wales (PEDW)	At 11.4.7 the SR notes that IEMA's Guidelines for the Environmental Assessment of Road Traffic (GEART) set out potential receptors that could be affected. However, these are not all reflected in Table 11.3, which sets out the effects that the applicant considers likely and that will be taken forward in the assessment. The SR does not explain why the effects that will be considered do not include, for example, effects on sites of ecological and nature conservation value, even though they are identified as potential receptors in GEART. The ES should fully explain and justify the rationale that is used to support the selection of effects for further assessment.	In respect of traffic and transport the potential receptors are the users or beneficiaries of the highways network assets and facilities, including pedestrians, cyclists, equestrian, and drivers who travel within the vicinity of the Proposed Development. The scope of this traffic and transport assessment provides comprehensive coverage of the proposed construction vehicle routes and roads surrounding the Proposed Development and it considers the implications of construction traffic. The potential impacts on ecological receptors from the proposed development including traffic has been assessed within Chapter 8: Biodiversity..

Technical Engagement

- 12.3.3 An assessment of the preferred AIL delivery route has been undertaken within an AIL access study (**Appendix 12A**) to understand if any improvements to the highway will be needed to accommodate the delivery of abnormal loads to the Site. The assessment identified temporary structural improvements were required at some junctions. All relevant permits for abnormal load transportation will be arranged prior to commencement of deliveries. The wind turbine component supplier and transporter are yet to be identified.
- 12.3.4 A Section 278 Agreement of the Highways Act 1980 will be secured between the relevant local highways authorities and the Applicant for the associated highway works needed to facilitate the delivery of the abnormal loads. The appropriate officer at each highways authority will be contacted in due course.

12.4 Data gathering methodology

Study area

- 12.4.1 The study area that has been used for this assessment is the public highway network in vicinity of the Site which it is anticipated would be used during the construction of the Proposed Development. For the purposes of this assessment, this includes the roads which may be affected by the construction traffic of the Proposed Development. These are set out below
- A4233 (Trebanog Road);
 - A4119 (Talbot Green); and
 - A4058 (Trehafod).

Wind Farm development

Site Access

- 12.4.2 Access to the Proposed Development would be taken from a newly proposed construction vehicle access on the A4233. The access is situated at:
- A4233 (Grid Ref: (470703.52 Easting), 5715135.81 (Northing)).
- 12.4.3 The Site access is approximately 1.2km north-east of the A4233/A4119 roundabout. The A4233 operates under the NSL (60mph) in the vicinity of the Site access but this changes to 30mph just north of the proposed site access. A speed survey was conducted to inform the design of the proposed construction vehicle access.
- 12.4.4 Once the proposed wind farm is constructed the proposed access from the A4233 will be retained for routine maintenance vehicles that will visit the site on an infrequent basis. The access would be gated when not in use by routine maintenance vehicles.

Route options for construction HGVs

- 12.4.5 As stated in Chapter: 4 all construction materials for the proposed development would be delivered from quarries and batching plants in the local area. A number of aggregate quarries are located near the site to the north and the south. This ES assumes the worst-case scenario that all construction resources are located from one source.
- 12.4.6 Likely HGV routes are identified as follows:
- HGV Route 1 (North): A4233 – A4058 – Catherine Street – Geliwastad Road – Morgan street - B4273/Berw Road) (north of the site access); and
 - HGV Route 2 (South): A4233 – A4119 (south of the site access).
- 12.4.7 It is assumed that construction vehicles would use one of the above routes. However, this is subject to material suppliers and aggregate availability from local quarries at the time of construction.

Route for abnormal loads

- 12.4.8 At this stage it is assumed that Swansea seaport would be used to deliver abnormal load. The Port of Swansea is one of South Wales major ports, located in Swansea, the port is well connected to the M4, offering great connectivity to the Strategic Road Network (SRN). It is less than 46km to Junction 34 of the M4.
- 12.4.9 The AIL access Study (**Appendix A**) has assessed the preferred route for AIL Deliveries, which is as follows:
- **Swansea Docks** – Baldwins Crescent – A483 - A483/Ffordd Amazon/Ashleigh Terrace Roundabout - A483- A483/M4 - M4 Eastbound – Junction 34, A4119 - A4119 Northbound – A4233 – **Site**

Desk study

- 12.4.10 A summary of the organisations that have supplied data, together with the nature of that data is outlined in **Table 12.4**.

Table 12.4 Data sources used to inform the Traffic and Transport assessment

Organisation	Data source	Data provided
Department for Transport (DfT)	Road traffic statistics ⁸	Baseline traffic data of the roads within study area
Agilysis	CrashMap Pro ⁹	Personal Injury Accident data
Google	Google Traffic ¹⁰	Indication of traffic conditions on the road network
Google	Google Street View ¹⁰	Desk study

12.5 Overall baseline

Current baseline

- 12.5.1 The Proposed Development site boundary is illustrated in **Figure 1.1**.
- 12.5.2 The Site encompasses an area approximately 182.27 hectares (ha), consisting of semi-improved acid grassland used for grazing livestock, with steep-sloping sides. The Site of the Proposed Development is located on the summit and upper slopes of Mynydd-y-Glyn to the south of the Rhondda River, the Site is absent of distinct field boundaries and tree cover resulting in the Site being open and exposed. The site is bounded to the west and south-west by the A4233, to the east by A470.
- 12.5.3 The A4233 connects the Site to the Strategic Road Network north to the A465 accessed via the A470, and the south to the M4 via the A4233.

Local Road Network

A4233

- 12.5.4 The A4233 is a two-lane single carriageway road and provides access to the Site. The A4233 has a north-east to south-west orientation, and it passes over a small burn and whilst in green space is bounded to the east by residential land use. The A4233 forms a roundabout with the A4119. The A4233 is a key route both for site access and for transitioning southbound to the M4. The A4233 operates at the national speed limit (60mph) but this changes to 30mph approximately 75 metres north of the proposed temporary construction vehicle site access location.
- 12.5.5 Footways and streetlighting are not present in the vicinity of the proposed temporary construction vehicle access however further north there is a formal pedestrian crossing as the A4233 Trebanog Road reaches the High Street and footways become available. Thereafter from Lewis Place there are pelican crossings and several other traffic signal crossings. At the Junction with the A4058 there is also a pedestrian crossing turning right, heading east from the A4233.

⁸ Department for Transport. (2022). Road Traffic Statistics. (Online) Available at: <https://roadtraffic.dft.gov.uk/#10/51.1974/0.7423/basemap-localauthorities-countpoints> (Accessed September 2022).

⁹ Crashmap. (2022). Crash maps. (Online) Available at: <https://www.crashmap.co.uk/> (Accessed September 2022).

¹⁰ Google. (2022). Google maps. (Online) Available at: <https://maps.google.com/> (Accessed September 2022).

A4119

- 12.5.6 The A4119 is a two-lane single carriageway road and provides transition from the A4233 to the M4 to the south. The A4119 routes from the A4233 in the vicinity of Tonyrefail, 1.2km from the Site access after which point it leads southbound for approximately 10.6 km until it reaches the M4 Junction 34 near Miskin. For most of the route the speed limit is the National Speed Limit (NSL (60mph). For sections of the A4119 including Ely Valley Road, parts of this section of the route alternate between the NSL and 40mph.
- 12.5.7 From Trebanog Road/ A4233 there are no footway or pedestrian provisions. This continues until Ely Valley Road roundabout where some footways can be found, dropped kerbs are present at the roundabout however no formal crossings are provided. Along Ely Valley Road there is a narrow footway along one side of the carriageway. There are no guardrails. Reaching Edwards business park roundabout there are substantial pedestrian provision on both sides of the carriageways and refuge islands to assist crossing. To the roundabout north of Talbot Green there is no pedestrian provision. From here heading into Talbot Green Crossroads there are narrow footways either side of carriageway with no guardrail. The crossing itself is signalised with pedestrian crossing facilities and guardrails. Through Talbot there is minimal provision until the M4 Junction 34 with occasional narrow footways

A4058

- 12.5.8 The A4058 is a two-lane single carriageway road which provides routing from the A4233 at a T-junction approximately 2.2km north-west of the Site location. The route alternates between 30 and 40mph whilst passing through a combination of urban areas and more rural areas respectively. Leaving Pontypridd, the route becomes a dual carriageway with a central reservation and the speed limit at this location is 40mph. As the route joins the A470 separate slip road the speed limit becomes 70mph and then as the route approaches the final junction to join the A470 the speed limit decreases to 30mph at the signal junction before joining the A470 at 50mph.
- 12.5.9 For the majority of the route there are footways on at least one side of the carriageway and ample streetlighting. Parking along this route is prohibited. At the junction with the A4233 there is a signalised pedestrian crossing at the junction with tactile paving and dropped kerbs. Travelling through Llwynceilyn there are footways and streetlighting. From Coedcae Road roundabout there is no pedestrian infrastructure or streetlighting. From this location and approaching the urban areas, there are formal crossings and footways either side until reaching the junction to join the A470 where there are no pedestrian crossings provided.

Strategic Road Network (SRN)

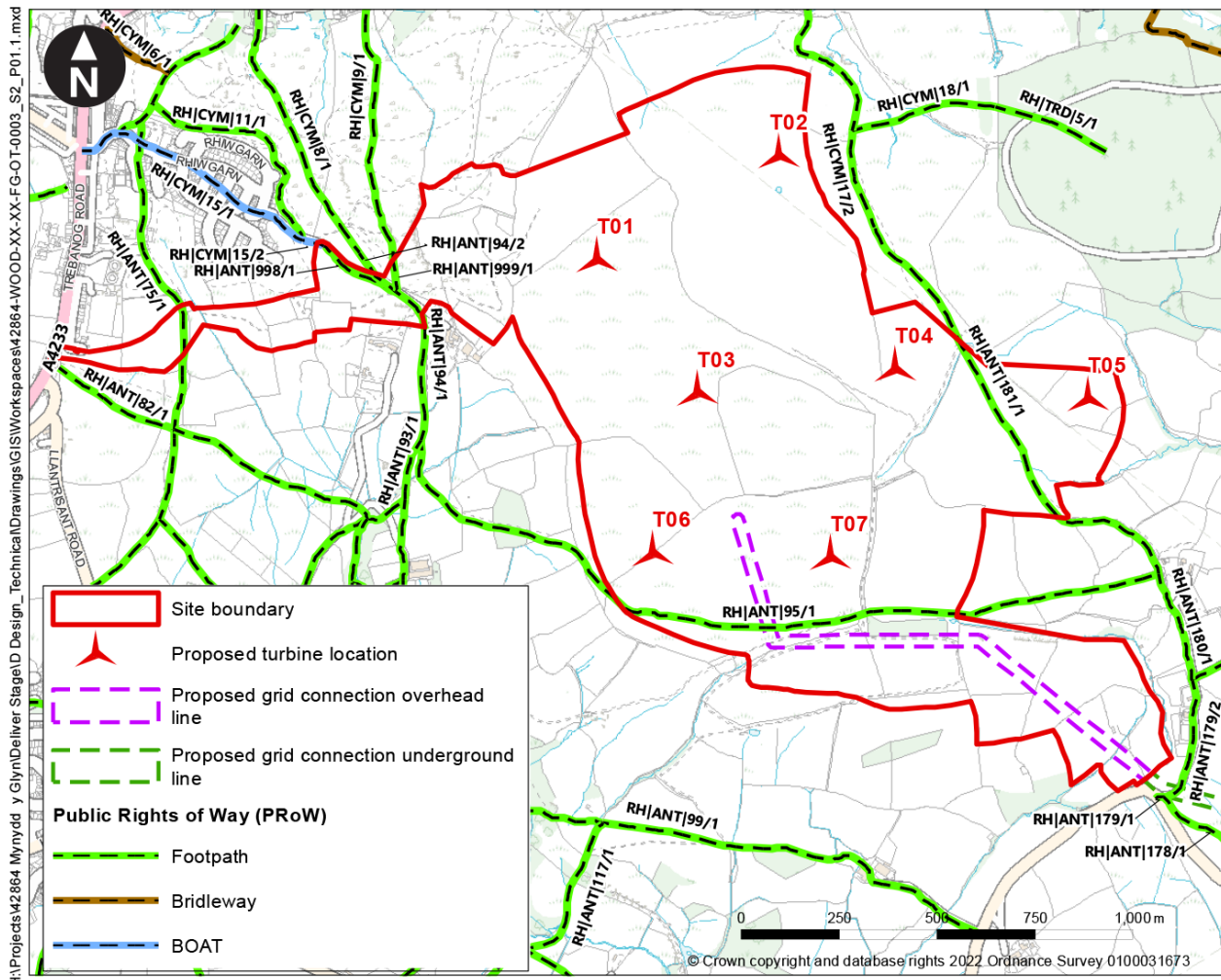
- 12.5.10 The Strategic Road Network (SRN) comprises the routes of national strategic importance (motorways and trunk roads), which are operated and maintained by South Wales Trunk Road Agency.
- 12.5.11 The M4 is a long-distance route between Swansea and London. The M4 will provide the majority of the AIL construction vehicle route from Swansea seaport to the M4 junction 34. This statement considers the M4 for the SRN, as it is assumed Swansea seaport will be used for the transport of Abnormal Loads.

Public Rights of Way (PRoW)

- 12.5.12 There is a Public Rights of Way (PRoW) that crosses the proposed site access at the western side of the site. There is a principal PRoW linking Porth in the Rhondda Valley to

Langton Court Farm, one of the closest properties to the south-east. A large area within the western and eastern parts of the Site is Access Land. An extract is provided in below.

Figure 12.1 Map of the PRow



Traffic Flows

- 12.5.13 The assessment of likely significant effects requires a comparison to be made between the likely environmental conditions during the Proposed Development construction and baseline situation.
- 12.5.14 Baseline traffic flow data has been established using publicly available traffic counts published by the Department for Transport (DfT). These counts detail the annual average daily traffic (AADT) (24-hour), and the proportion of HGVs, at appropriate locations on each road within the study area. The data from 2019 count (pre-COVID-19) are presented **Table 12.5**.
- 12.5.15 A factor has been applied to this count to reduce the AADT 24-hour flow to a 12-hour traffic flow to coincide with the typical 12-hour working days. It is proposed that construction will take place between 07:00 to 19:00 hours on weekdays and 07:00 to 13:00 on Saturdays. The factor 0.80719 for all vehicles and 0.749958 for HGVs have

been derived from Table TRA0307 '*Motor Vehicle Traffic Distribution by time of day and day of the week on all roads, Great Britain: 2019*'¹¹.

Table 12.5 2019 baseline traffic flow (two-way)

Road Name	2019 Baseline AADT (24hr)		2019 Baseline (12hr adjusted)	
	Total Vehicles	HGVs	Total Vehicles	HGVs
A4233 (Trebanog Road, DfT ID:78504)	7817	126	6310	95
A4119 (Talbot Green, DfT ID: 10654)	27497	466	22195	350
A4058 (Trehafod, DfT ID:617)	21800	437	17597	328

Source: Department for Transport (<https://roadtraffic.dft.gov.uk/#6/55.254/-6.053/basemap-regions-countpoints>)

- 12.5.16 Current Baseline traffic flows have been calculated by applying Growth Factors from the National Trip End Model (NTEM) forecasts. NTEM is designed by the DfT and provides traffic growth forecasts for use in local and regional transportation models.
- 12.5.17 A growth factor of 1.0386 was applied to the 2019 base flows to forecast traffic for the current baseline year 2022. This growth factor was calculated using the Trip End Model Presentation Program (TEMPro), which determines growth factors based upon the NTEM forecasts. These factors were determined by using the Rhondda Cynon Taf geographic area.
- 12.5.18 **Table 12.6** summarises the 2022 current Baseline traffic flows (two-way).

Table 12.6 2022 baseline traffic flow (two-way) (12 hour adjusted)

Road Name	2022 Baseline (12hr adjusted)	
	Total Vehicles	HGVs
A4233 (Trebanog Road, DfT ID:78504)	6554	97
A4119 (Talbot Green, DfT ID: 10654)	23052	364
A4058 (Trehafod, DfT ID:617)	18276	341

Personal Injury Accident

- 12.5.19 Records of personal injury accidents (PIAs) have been obtained from the CrashMap database (<https://www.crashmap.co.uk>) which uses information collected from the Police. This data is approved by the National Statistics Authority and reported on by the Department for Transport (DfT) each year.

¹¹ Department for Transport. (2019). Road Traffic Statistics (TRA). (online) Available at: <https://www.gov.uk/government/statistical-data-sets/road-traffic-statistics-tra>. (Accessed September 2022).

- 12.5.20 Records have been obtained over a five-year period between 2017 and 2022. It should be noted however, that in 2021 only half a year's work of data was collected, and so the number of years work of data is 4.5.
- 12.5.21 The impact of casualties differs according to the severity of the injuries sustained. Three groups are usually differentiated as follows:
- fatal: any death that occurs within 30 days from causes arising out of an accident;
 - serious: casualties who require hospital treatment and have lasting injuries, but who do not die within 30 days of an accident; and
 - slight: where casualties have injuries that do not require hospital treatment, or, if they do, the effects of the injuries quickly subside.
- 12.5.22 **Table 12.7** and **Table 12.8** summarise the PIA records on the A4023, A4119 and the A4058 which form routes split into respective north and south strategic road networks heading from the Site access point. The full accident records are included in **Appendix C**.

Table 12.7 Summary of recorded PIAs in proximity of the Site (Headed North from site access)

Direction/Junction/Link	Slight	Serious	Fatal	Total	Accident Rate Per Annum
A4233 (from site access to Rhiwgarn Road)	3	0	0	3	0.67
A4233 junction with Rhiwgarn Road	2	0	1	3	0.67
A4233 (Rhiwgarn to Glynfach Road)	4	1	0	5	1.12
A4233/A4058 Junction	4	1	0	5	1.12
A4058 from A4233 junction to Coedcae Road roundabout	2	0	0	2	0.45
A4058 from Coedcae Road roundabout to Pontypridd roundabout	15	2	0	17	3.78
A4058 / Pontypridd roundabout	3	0	0	3	0.67
A4058 from Pontypridd roundabout to B4595	4	2	0	6	1.34
A4058 to A470 Junction onto connected slip road to next roundabout	0	1	0	1	0.23
Bridge Street roundabout on to A470 heading north	3	1	0	4	0.89
A470 from Bridge Street Roundabout to Junction to the B4275	6	1	0	7	1.56

Direction/Junction/Link	Slight	Serious	Fatal	Total	Accident Rate Per Annum
From the B4275 junction to Abercynon Roundabout	4	0	0	4	0.89
Abercynon Roundabout	8	1	0	9	2
A470 from Abercynon Roundabout to Abercanaid Roundabout	34	6	0	40	8.89
Abercanaid Roundabout	3	0	0	3	0.67
A470 from Abercanaid Roundabout to Roundabout with the A4102 (near Welsh Government Building)	1	0	0	1	0.23
A4102/A470 roundabout	3	0	0	3	0.67
A470 from A4102/A470 roundabout to A4102 (Near Merthyr Tydfil retail park)	2	2	0	4	0.89
A470/ A4102 roundabout / Swansea Road	3	1	0	4	0.89
From A470 roundabout with A4102 /Swansea Road to A465	1	0	0	1	0.23
A470/ A565 roundabout / junction	2	1	0	3	0.67
Total	107	20	1	128	28.45

Base Data Source: Department for Transport data published by www.crashmap.co.uk

Table 12.8 Summary of recorded PIAs in proximity of the Site (Headed South from site access)

Direction/Junction/Link	Slight	Serious	Fatal	Total	Accident Rate Per Annum
A4233 junction with Collenna Road	3	0	0	3	0.67
A4233 from Collenna Road to A4119 Roundabout junction	0	0	0	0	0
A4233/ A4119 Roundabout	2	1	0	3	0.67
A4119 Southbound to Mill Street Roundabout	2	0	0	2	0.45
Mill Street Roundabout / A4119 Southbound	1	0	0	1	0.23

Direction/Junction/Link	Slight	Serious	Fatal	Total	Accident Rate Per Annum
A1499 between Mill Street roundabout and Ely Valley Road roundabout	7	1	0	8	1.78
Ely Valley Road roundabout/ A4119 to Heol-Y-Sarn Roundabout	6	0	0	6	1.34
Heol-Y-Sarn Roundabout with the A4119	4	0	0	4	0.89
Heol-Y-Sarn Roundabout / A4119 to roundabout (near British Airways Buildings)	1	1	0	2	0.45
A4119 Roundabout / Ely Valley Road (near British Airways Buildings)	2	0	0	2	0.45
From A4119 Roundabout / Ely Valley Road to signalised junction with B4595	2	0	0	2	0.45
From signal junction with A4119/B4595 to Roundabout with the A473	2	0	0	2	0.45
Roundabout junction A4119 with A473	3	0	0	3	0.67
From A4119 / A473 roundabout to M4 along the A4119	9	1	0	10	2.23
M4 Junction 34 roundabout (Miskin Interchange)	5	1	0	6	1.34
Total	49	5	0	54	12

Base Data Source: Department for Transport data published by www.crashmap.co.uk

12.5.23 **Table 12.7** and **Table 12.8** shows that the following sections of roads and junctions have an annual accident rate per annum greater than 1;

- A4233 (Rhiwgarn to Glynfach Road) – 1.12 accidents per annum;
- A4233/A4058 Junction – 1.12 accidents per annum;
- A4058 from Coedcae Road roundabout to Pontypridd roundabout – 3.78 accidents per annum;
- A4058 from Pontypridd roundabout to B4595 – 1.34 accidents per annum;
- A470 from Bridge Street Roundabout to Junction to the B4275 – 1.56 accidents per annum;
- Abercynon Roundabout – 2 accidents per annum;

- A470 from Abercynon Roundabout to Abercanaid Roundabout – 8.89 accidents per annum;
- A1499 between Mill Street roundabout and Ely Valley Road roundabout – 1.78 accidents per annum;
- Ely Valley Road roundabout/ A4119 to Heol-Y-Sarn Roundabout – 1.34 accidents per annum;
- From A4119 / A473 roundabout to M4 along the A4119 – 2.23 accidents per annum; and
- M4 Junction 34 roundabout (Miskin Interchange) – 1.34 accidents per annum.

12.5.24 Generally, the higher accident rates are found on sections of roads that are significantly busier and longer than other sections of road that have been assessed. However, it is noted that the roads adjacent to the site including Trebanog Road have lower accident rates.

12.5.25 The accident data identifies that there has been a total of 1 accident classified as fatal within the study area during the most recent 4.5 years of data on record. This accident was in the vicinity of the A4233 / Rhiwgarn Road signal junction approximately 0.5km north of the proposed site access.

Future baseline

12.5.26 Background traffic growth will occur on the local road network irrespective of whether or not the Proposed Development is constructed. Projected baseline traffic growth flows for the expected year of construction (2026) have been calculated by applying growth factors from the National Trip End Model (NTEM) forecasts.

12.5.27 A growth factor of 1.0600 was applied to the 2019 Baseline flows to forecast traffic for the year 2026, assumed to be the year of construction peak phase.

12.5.28 **Table 12.9** summarises the 2026 Future Baseline traffic flows (two-way).

Table 12.9 2026 Future Baseline traffic flow (two-way) – 12hr

Road Name	2022 Baseline (12hr adjusted)	2022 Baseline (12hr adjusted)	2026 Baseline (12hr adjusted)	2026 Baseline (12hr adjusted)
	Total Vehicles	HGV	Total Vehicles	HGV
A4233 (Trebanog Road, DfT ID:78504)	6554	97	6689	101
A4119 (Talbot Green, DfT ID: 10654)	23052	364	23527	371
A4058 (Trehafod, DfT ID:617)	18276	341	18653	348

12.6 Embedded measures

12.6.1 A range of environmental measures have been embedded into the Proposed Development as outlined in **Section 3.4. Table 12.10** outlines the embedded measures of relevance to the Traffic and Transport assessment.

Table 12.10 Summary of the embedded environmental measures relevant to Traffic and Transport

Receptor	Potential changes and effects	Embedded measures	Compliance mechanism
Construction			
All	Vehicles could carry mud and debris onto the carriageway	Wheel washing facilities will be installed on Site. Sheeting installed prior to leaving site.	DNS Planning condition/Draft CTMP
All	Changed traffic flows on local roads	Specific travel routes to and from Site are defined for delivery vehicles.	DNS Planning condition/Draft CTMP
All	Possible impact on Road Safety due to increased traffic flows on highway network	No existing accident problem identified. HGVs to use identified route.	DNS Planning condition

12.6.2 In addition to the measures mentioned in **Table 12.10**, a CTMP has been developed which recognises the requirement to manage construction traffic movement. The CTMP is presented in **Appendix B**. The following measures have been incorporated within the CTMP to manage the daily delivery profiles and control construction vehicle movements and routing of HGVs to/from the site:

- upon commencement, all deliveries, operatives, and visitors to the Site will report to the security gate. This will be communicated to all early works contractors at their pre-start meeting;
- the main contractor will develop a logistics plan highlighting the access point for the project, loading bay, pedestrian/vehicular segregation, welfare, storage, security, and material handling that would be enforced following full site establishment;
- approved haul routes to the Site will be identified and protocols put in place to ensure that HGV drivers adhere to these routes;
- all contractors will be provided with a Site induction pack containing information on delivery routes and restrictions on routing;
- temporary signage will be erected along the identified construction routes to warn people of construction activities and associated construction vehicles;
- an integral part of the progress meetings held with all trade contractors is the delivery schedule pro-forma. All contractors will be required to give details of proposed timing of material deliveries to the Site;
- a CTMP and compliance monitoring therein will be included within all trade contractor tender enquiries to ensure early understanding and acceptance/compliance with the rules that would be enforced on this project;
- under no circumstances will HGVs be allowed to lay-up in surrounding roads. All personnel in the team will be in contact with each other and Site management, who in turn, will have a mobile and telephone contact with sub-contractors;
- roads will be maintained, and road sweeper deployed as required;

- a wheel wash facility will be installed on-site during the construction period in order to reduce mud and debris being deposited onto the local road network; and
- given the rural location of the Site in relation to the public transport network, the opportunity for contractors to travel to work by public transport is not a viable choice. The distance of the Site from the established cycle network and lack of footway connections to local amenities and establishments also means that travel by alternative sustainable modes is unlikely to be chosen by contractors. However, car-sharing is something that can be promoted. To identify and support travel choice initiatives, a site travel information pack such as existing public transport information and car-sharing club could be developed and distributed to construction staff.

12.7 Scope of the assessment

The Proposed Development

- 12.7.1 The Proposed Development is to construct and operate a wind farm of up to seven turbines and associated infrastructure including access tracks, foundation, cabling, substation, and connection to the electricity grid distribution system.

Construction

- 12.7.2 The construction period for the wind farm is anticipated to last approximately 101 weeks. The construction process would consist of the following principal activities:
- upgrading of existing tracks and construction of new access tracks and passing places inter-linking the turbine locations and substation; this will require import of suitable roadstone;
 - potential remedial works to public highway to facilitate delivery of turbines which will be confirmed following discussion with the Highways Authority;
 - formation of site compound including hard standing and temporary site office facilities;
 - construction of crane hardstanding areas to facilitate erection of turbines;
 - construction of turbine foundations and transformer bases where required;
 - construction of site substation and transformer building;
 - excavation of trenches and cable laying adjacent to site roads;
 - connection of on-site distribution and signal cables;
 - delivery and erection of wind turbines; and
 - connection to national grid distribution system via Overhead Line (OHL) within the site, then underground following mostly the highway network to the grid connection at upper boat.
- 12.7.3 Many of these operations would be carried out concurrently to minimise the overall length of the construction programme. Development would be phased such that at different parts of the Site, the civil engineering works will be continuing whilst wind turbines are being erected.

Operation

- 12.7.4 The Proposed Development would operate autonomously and would only be visited for inspection on a monthly basis, or should a fault occur.

Decommissioning

- 12.7.5 The wind farm will be designed with an operational life of 30 years. When dismantling and removing the turbines the bases would be broken out to below ground level and all cables cut at depth below ground level and left in the ground. Roads would either be left for use by the landowner or covered with topsoil. No stone would be removed from the Site. The decommissioning works are estimated to take six months, and no more than 12 months. This approach is considered to be less environmentally damaging than seeking to remove foundations and cables entirely.
- 12.7.6 The turbine components themselves will be taken to an appropriate recycling facility where applicable. It is not possible to identify a specific facility at this time.
- 12.7.7 It is anticipated that the number of vehicle movements related to decommissioning would be significantly less than the number of vehicle movements related to construction.

Spatial scope

- 12.7.8 The spatial scope of the assessment of Traffic and Transport covers the area of the Proposed Development Site, together with the highways links that have formed the basis of the study area described in **Section 12.4**
- 12.7.9 These highway links provide comprehensive coverage of the routes surrounding the Site. Beyond these roads, traffic from the Proposed Development would access the wider road network where its effect would be diluted by existing traffic on these routes or would distribute to a point where the effects from traffic would be minimal.
- 12.7.10 The receptors along the highways identified in **Section 12.4** form the scope of the assessment in relation to potentially traffic-related effects.

Temporal scope

- 12.7.11 The temporal scope of the assessment of Traffic and Transport is consistent with the period over which the construction of Project would be carried out and therefore covers the period 2025, 2026 and 2027.

Potential receptors

- 12.7.12 Receptors are the users or beneficiaries of the highways network assets and facilities such as pedestrians, cyclists, equestrian, and drivers who travel within the vicinity of the Proposed Development.
- 12.7.13 The scope of the assessment provides comprehensive coverage of the routes surrounding the Proposed Development and it will consider of the implications of construction traffic.
- 12.7.14 GEART¹² identifies the following groups and special interest groups that may be affected:
- people at home;

¹² Institute of Environmental Assessment (IEA). (1993). Guidelines for the Environmental Assessment of Road Traffic (GEART). IEA; Lincoln, UK.

- people at work;
- sensitive groups including children, elderly and disabled;
- sensitive locations such as hospitals, churches, schools and historical buildings;
- pedestrians;
- cyclists;
- open spaces, recreational areas, and shopping areas;
- sites of ecological and nature conservation value; and
- sites of tourist/visitor attractions.

Likely significant effects

12.7.15 The effects on Traffic and Transport receptors which have the potential to be significant and have been taken forward for detailed assessment are summarised in **Table 12.11**.

Table 12.11 Traffic and Transport receptors scoped in for further assessment

Activity	Likely Significant Effects	Receptor
Additional road traffic on local routes generated by the construction of the Proposed Development	Potential increase in traffic flows on the local road network and impact on: <ul style="list-style-type: none"> • severance; • driver delay; • pedestrian delay; • pedestrian amenity; • fear and intimidation; and • accident and safety. 	Occupants (residents, workers, schools, shopping areas, etc – groups identified in GEART7) alongside the roads used by construction traffic and users of the roads such as drivers, pedestrians, and cyclists.

Effects scoped out

12.7.16 The following potential effects have been scoped out of further assessment because the potential effects are not considered to be significant.

- potential effects on users of the road network as a result of operational traffic from the Proposed Development:
 - ▶ the Proposed Development would operate autonomously and would only be visited for inspection on a monthly basis or should a fault occur. Given that receptors would not be significantly affected during the operational period they are therefore scoped out of further assessment.
- potential effects on users of the road network as a result of decommissioning traffic from the Proposed Development:
 - ▶ the effects during the decommissioning of the Proposed Development have not been considered in detail given the unknown conditions of the highway following the 30-year life cycle of the Proposed Development. Furthermore, fewer traffic movements would be generated during decommissioning than during construction as below ground infrastructure and access tracks will remain in situ and therefore the magnitude of any change is likely to be less than during construction. Decommissioning effects are therefore scoped out of further assessment. However,

a separate assessment of effects could be conducted nearer time should there be any concerns in respect of decommissioning.

- hazardous loads – No hazardous loads are anticipated in relation to the Proposed Development.

12.8 Assessment methodology

Methodology for the prediction of effects

- 12.8.1 The generic project-wide approach to the assessment methodology is set out in **Chapter 2: Approach to preparing the Environmental Impact Assessment**, and specifically in **Sections 2.5 to 2.8**. However, whilst this has informed the approach that has been used in this Traffic and Transport assessment, it is necessary to set out how this methodology has been applied, and adapted as appropriate, to address the specific needs of this Traffic and Transport assessment.
- 12.8.2 The assessment compares the traffic flows for the 2026 Future Baseline with those for the 2026 Future Baseline with the Proposed Development construction traffic.

General approach

- 12.8.3 The guidance that is followed when assessing the potential significance of road traffic effects is summarised in GEART⁷ (IEA, 1993), which states the following.
- "At an early stage, it is useful to identify particular groups or locations which may be sensitive to changes in traffic conditions." (Paragraph 2.5).*
- "The detailed assessment of impacts is...likely to concentrate on the period during which the absolute level of an impact is at its peak, as well as the hour at which the greatest level of change is likely to occur." (Paragraph 3.10).*
- 12.8.4 To assess the impact, the percentage increase in traffic will be determined by comparing the Proposed Development traffic flows with the baseline traffic flows on the highway links identified in **Table 12.14** GEART⁷ provides two rules that are used to establish whether an environmental assessment of traffic effects should be carried out on receptors:
- **Rule 1:** Include highway links where traffic flows are predicted to increase by more than 30% (or where the number of HGVs is predicted to increase by more than 30%); and
 - **Rule 2:** Include sensitive areas where traffic flows are predicted to increase by 10% or more.
- 12.8.5 It should be noted that, according to GEART⁷, predicted traffic flow increases below 10% are generally not considered to be significant as daily variations in background traffic flow may fluctuate by this amount. Changes in traffic flows below this level are, therefore, assumed not to result in significant environmental effects and have therefore not been assessed further as part of this chapter.

Environmental effects assessed

- 12.8.6 GEART⁷ sets out the following environmental effects that should be considered:

Severance

- 12.8.7 There are no predictive formulas which give simple relationships between traffic factors and levels of severance. GEART⁷ states that changes in traffic flow of 30%, 60% and 90% are regarded as producing 'slight', 'moderate' and 'substantial' changes in severance. In general, marginal (slight) changes in traffic flow are, by themselves, unlikely to create or remove severance.

Driver delay

- 12.8.8 GEART⁷ states that 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. The capacity of a road or a particular junction can be determined by establishing the ratio of flow to capacity (RFC).

Pedestrian delay

- 12.8.9 Given the range of local factors and conditions which can influence pedestrian delay, GEART⁷ does not recommend that thresholds be used as a means to establish the significance of pedestrian delay but recommend that reasoned judgements be made instead.

Pedestrian amenity

- 12.8.10 GEART⁷ notes that changes in pedestrian amenity may be considered significant where the traffic flow is halved or doubled, with the former leading to a positive effect and the latter a negative effect.

Fear and intimidation

- 12.8.11 There are no commonly agreed thresholds by which to determine the significance of this effect. GEART⁷ notes that special consideration should be given to areas where there are likely to be particular problems, such as high-speed sections of road, locations of turning points and accesses. Consideration should also be given to areas frequented by school children, the elderly and other vulnerable groups.

Accidents and safety

- 12.8.12 This is informed by a review of existing collision patterns and trends based upon the existing personal injury collision records and the forecast increase in traffic.

Receptor sensitivity

- 12.8.13 As set out in GEART⁷, the impact of traffic is dependent upon a wide range of factors which include the volume of traffic, traffic speeds and operational characteristics and traffic composition (such percentage of HGVs). The perception of changes in traffic varies according to factors such as:
- existing traffic levels;
 - the location of traffic movements;
 - the time of day;
 - temporal and seasonal variation of traffic;

- design and layout of the road;
- land-use activities adjacent to the route; and
- ambient conditions of adjacent land-uses

- 12.8.14 Each highway link included in the assessment has been assigned a sensitivity in accordance with GEART⁷ based on the above the groups identified in **paragraph 12.7.14**.
- 12.8.15 This is based on the proximity of sensitive receptors to the highway link and the highway environment. **Table 12.12** summarises the rationale used to determine the sensitivity against the corresponding receptors as part of the assessment as contained in GEART⁷. Professional judgement is also used to determine the sensitivity of the receptor.

Table 12.12 Receptor sensitivity

Sensitivity	Description / Reason	Receptor
High	Highway links with a high sensitivity to changes in traffic flows include routes with sensitive receptors alongside them such as schools and colleges, and/or where there are land-uses which result in high volumes of pedestrian/cycle users and the road is narrow and/or footway provision is poor, existing traffic volumes are high for the type of road resulting in congestion and road safety issues.	Occupants of land-uses alongside the highway link and users of the highway link
Medium	Highway links with a medium sensitivity to changes in traffic flows include routes with some sensitive receptors alongside them, and/or where there are land-uses which result in some pedestrian/cyclist users, road design and footway provision is adequate/appropriate, existing traffic volumes can be accommodated for the type of road but approaching capacity.	Occupants of land-uses alongside the highway link and users of the highway link
Low	Highway links with low sensitivity to changes in traffic flows include routes with no sensitive receptors and some land uses alongside and no/very limited pedestrian/cyclist users, road design and footway provision is appropriate, existing traffic volumes can be accommodated for the type of road.	Occupants of land-uses alongside the highway link and users of the highway link
Negligible	Highway links with negligible sensitivity to changes in traffic flows include routes with no sensitive receptors and very few land uses alongside them, which have no direct access and no/very limited pedestrian/cyclist users and existing traffic volumes can be accommodated for the type of road	Users of the highway link

- 12.8.16 Sensitivity judged as 'High' or 'Medium' results in Rule 2 (sensitive areas where traffic flows are predicted to increase by 10% or more) being considered for that link. Sensitivity judged as 'Low' or 'Negligible' results in Rule 1 being considered for that link where traffic flows are predicted to increase by more than 30% or where the number of HGVs is predicted to increase by more than 30%.

Magnitude of change

- 12.8.17 GEART⁷ recognises that professional judgement should be used as part of the assessment and states the following:

“For many effects there are no simple rules or formulae which define thresholds of significance and there is, therefore, a need for interpretation and judgement on the part of the assessor, backed-up by data or quantified information wherever possible. Such judgements will include the assessment of the numbers of people experiencing a change in environmental impact as well as the assessment of the damage to various natural resources.” (Paragraph 4.5).

- 12.8.18 Based on the Rule 1 and Rule 2 and the sensitivity of the receptors, **Table 12.13** shows the magnitude of change applied to the environmental effects to help identify levels of significance. The indicators to assess the magnitude of change are based on advice included within GEART⁷ and professional judgement.

Table 12.13 Magnitude of change

Magnitude of change				
Transport effect	High	Medium	Low	Negligible
Severance	Change in total traffic or HGV flows over 91%.	Change in total traffic or HGV flow of 61-90%.	Change in total traffic or HGV flows of 31-60%.	Change in total traffic or HGV flows of less than 30%.
Driver delay	High increase in queuing at junctions and/or congestion on road links.	Medium increase in queuing at junctions and/or congestion on road links.	Low increase in queuing at junctions and/or congestion on road links.	Low or no increase in queuing at junctions and/or congestion on road links.
Pedestrian amenity and delay and fear and intimidation	Based on general level of pedestrian activity, visibility, and physical conditions such as traffic flow, traffic composition, crossing points and pavement width/separation from traffic.			
Accident and safety	Informed by a review of existing collision patterns and trends based upon the existing personal injury accident records and the forecast increase in traffic.			

Significance criteria

- 12.8.19 The classification of a likely traffic and transport effect is derived by considering the sensitivity of the receptor (derived from **Table 12.12**) against the magnitude of change (derived from **Table 12.13**) as defined in **Table 12.14** below. The shading indicates those significance ratings that are deemed to be ‘significant’ effects.

Table 12.14 Significance evaluation matrix

		Magnitude of change			
		High	Medium	Low	Negligible
Receptor sensitivity	High	Major (Significant)	Major (Significant)	Moderate (Significant)	Negligible (Not significant)
	Medium	Major (Significant)	Moderate (Significant)	Minor (Not significant)	Negligible (Not significant)

	Magnitude of change			
	Moderate (Significant)	Minor (Not significant)	Minor (Not significant)	Negligible (Not significant)
Low				
Negligible	Negligible (Not significant)	Negligible (Not significant)	Negligible (Not significant)	Negligible (Not significant)

12.8.20 Major and Moderate effects are considered to be significant, whilst Minor and Negligible effects are considered to be not significant.

12.9 Preliminary assessment of Traffic and Transport effects

12.9.1 This section provides a preliminary assessment of the likely significant environmental effects arising from the traffic predicted to be generated by the Proposed Development.

Sensitivity of highway links

12.9.2 **Table 12.15** identifies the sensitivity of the relevant highway links (in vicinity of the count point and general nature of highway link as a whole) and the GEART⁷ Rule that applies.

Table 12.15 Sensitivity of highway links (baseline situation)

Highway link	Rational	Receptor sensitivity	Assessment (Rule 1/2)
A4233 (Trebanog Road)	60mph two-lane single carriageway	Negligible	Rule 2
A4119 (Talbot Green)	40/60mph two-lane single carriageway and then two-lane dual carriageway.	Negligible	Rule 2
A4058 (Trehafod)	30/40/50/60 mph two-lane single carriageway and then dual carriageway	Negligible	Rule 2

Construction traffic

12.9.3 Where possible, construction operations would be carried out concurrently, thus minimising the overall length of the construction programme. A 101-weeks construction programme (commencing in 2025) has been assumed for the purposes of this assessment.

Wind farm

12.9.4 As a worst-case scenario, it is assumed that 100% of all aggregate would be sourced from off-site sources via road. **Table 12.16** shows the predicted traffic generation during construction phase of wind farm.

Table 12.16 Predicted traffic generation during total 101-week construction phase

Activity	Total loads	Total trips (two-way)
Delivery of Plant and Equipment	30	60
Delivery of Stone for Construction Compound	135	270
Delivery of Compound General Equipment	20	40
Delivery of Stone for Access Tracks	1,428	2,856
Delivery of Geogrid	7	14
Delivery of Culvert Materials	30	60
Delivery of Stone for Areas of Crane Operation	270	540
Delivery of Backfill Stone for Turbines	792	1,583
Delivery of Concrete for Turbines	1,100	2,200
Concrete for transformer foundations	28	56
Delivery of Base Rings	4	8
Delivery of Shuttering	7	14
Delivery of Form work and reinforcing steel	44	88
Delivery of Stone for substation	71	142
Delivery of Fibre Optic Cabling	3	6
Delivery of Sand for cable trench	143	286
Delivery of Cabling	6	12
Delivery and Removal of Mobile Crane	24	48
Delivery of Turbines	70	140

Activity	Total loads	Total trips (two-way)
Delivery of Concrete for Control Building Base	11	22
Delivery of Electrical Equipment	60	120
Delivery of External Transformers	2	4
Delivery of HV Plinth Concrete	34	68
Delivery of Met Mast	4	8
Removal of Plant and Equipment	30	60
Total	4353	8705

Grid connection

- 12.9.5 The site will be connected to the grid by a combination of the following:
- an approximate 1.4km length of Overhead Line (OHL) provided on-site; and
 - beyond the site's red line boundary / off-site by underground cable to upper boat.
- 12.9.6 The overhead line section of the grid connection forms part of this DNS Application and is included within the Site boundary.
- 12.9.7 However, the underground connection to the grid will be a matter for Western Power Distribution (WPD) and subject to a separate assessment given that most of the grid connection would need to be off-site via underground cable.

Peak Traffic

- 12.9.8 As a worst-case scenario it is assumed that midway through the construction of the Substation there could be cabling, and excavation works in combination with turbine deliveries undertaken in week 55 which would constitute the peak traffic of the wind farm.
- 12.9.9 Based on the construction program this construction traffic results in a peak of 42 HGV movements two-way during a 12-hour weekday. This peak is predicted to occur during month 13 (April 2026) and therefore only for 4 weeks of the total 101-week construction programme.

Construction traffic distribution

- 12.9.10 It is important to note that the assessment assumes 100% of aggregate would be sourced off-site from one quarry. A definite construction route is subject to the final sources of aggregate and routing agreement with Rhondda Cynon Taf Borough County Council (RCTBCC). Therefore, at this stage the assessment assumes that 100% of HGV traffic would route on one construction route.

12.9.11 **Table 12.17** shows the worst-case distribution of the construction traffic on the local road network.

Table 12.17 Distribution of construction traffic

Activity	Construction traffic (two-way)
A4233 (Trebanog Road)	42
A4119 (Talbot Green)	42
A4058 (Trehafod)	42

Construction effects

12.9.12 **Table 12.18** shows the worst-case percentage change in traffic flows in 2026, with construction traffic on the local road network. The GEART⁷ screening exercise is also presented within this table. Percentage increases that exceed the relevant GEART⁷ threshold of assessment rule would be subject to further assessment. Any increase that is below the GEART⁷ threshold would not be taken forward for further assessment.

Table 12.18 Forecast baseline traffic 2026 with predicted construction traffic

Highway link	GEART ⁷ screening rule	2026 Base		Construction traffic	2026 + construction traffic		% change		Further assessment required
		Total	HGVs		Total	HGVs	Total	HGVs	
A4233 (Trebanog Road)	Rule 2	6689	101	42	6731	143	0.6%	41.2%	Exceeds 30% in HGV traffic only
A4119 (Talbot Green)	Rule 2	23527	371	42	23569	413	0.2%	11.2%	Below 30% - no assessment required
A4058 (Trehafod)	Rule 2	18653	348	42	18695	390	0.2%	12.0%	Below 30% - no assessment required

12.9.13 **Table 12.18** identifies the highway links that are taken forward for further assessment based on the percentage impacts on these links exceeding the 10% threshold (Rule 1) or 30% HGV threshold (Rule 2) when considering the worst-case scenario whereby all aggregate is imported to site.

12.9.14 A further assessment of environmental effects on the following link will be undertaken:

- A4233

12.9.15 The GEART⁷ threshold is exceeded due to the 41.2% increase in HGVs movements when compared to baseline HGV traffic on this highway link.

Severance

- 12.9.16 The A4233 is part of the primary road network. There are no pedestrian routes or footways present on either side of the carriageway in the vicinity of the proposed temporary construction vehicle site access.
- 12.9.17 The highway link has a negligible medium receptor sensitivity and increases in HGV traffic are between 30-60% resulting in low change (**Table 12.13**). However, this change is only noted because of the negligible existing levels of HGV traffic. This change is also only temporary, therefore considering this, these changes are not significant (**Table 12.14**).

Driver delay

- 12.9.18 This section of the A4233 is a 60mph high standard road with road markings and has adequate space for all manoeuvres such as a right turn lane. Increases in traffic of 4 HGV vehicles every 60 minutes would not affect driver delay. The magnitude of change is therefore considered to be negligible.

Pedestrian delay and amenity

- 12.9.19 There is no pedestrian provision along the A4233 in the vicinity of the proposed temporary construction vehicle Site access.
- 12.9.20 Further north on the A4233 there is pedestrian provision. Increases in traffic of 4 HGV vehicles every 60 minutes would not affect pedestrian delay and amenity. The magnitude of change is therefore considered to be negligible.

Fear and intimidation

- 12.9.21 The assessment of the pedestrian amenity environmental effect mentioned above is also applicable here. The magnitude of change is considered to be negligible.

Accident and safety

- 12.9.22 The study area does not exhibit severe accident hot spots which need to be targeted with specific casualty reduction measures. The magnitude of change is considered to be negligible.

12.10 Assessment of cumulative (inter-project) effects

- 12.10.1 A cumulative effects assessment (CEA) typically accounts for any other developments located within the study area to be included in the cumulative effects assessment to be analysed and the potential cumulative effects assessed. For the purposes of this CEA the list of other developments identified in **Chapter 2, Section 2.8** has been reviewed for any vehicle trip information to be considered in this assessment. It was found that there was minimal vehicle trip information available for the identified developments, either because the development is in too early stage of the planning process, or the scale of development precluded any vehicle trip assessment being submitted or readily available in the public domain.
- 12.10.2 As a result of the above it has been determined that the cumulative effects within the study area have been covered by the application of traffic growth factors calculated with reference to National Traffic Model (NTM)/local TEMPro data. This has formed the basis for the future baseline.

- 12.10.3 The traffic assessment presented in this chapter provides a worst-case scenario in terms of percentage change in traffic flows. This is because 2026 Baseline Future year flows are lower without the addition of potential committed development traffic.

12.11 Preliminary significance conclusions

- 12.11.1 A summary of the results of the Traffic and Transport assessment is provided in **Table 12.19**.

Table 12.19 Summary of significance of effects

Receptor and summary of predicted effects	Sensitivity/ importance/ value of receptor ¹	Magnitude of change ²	Significance ³	Summary rationale
A4233				
Severance: The separation of people from places and other people.	Negligible	Low	Not significant	Severance would not occur as the value of the receptor is negligible and the magnitude of change is low, this is only due to low existing HGV traffic.
Driver delay: Traffic delays as a result of development traffic.	Negligible	Negligible	Not significant	The addition of the right-hand turning lane on the A4233 will allow cars to pass with ease and limit any effects to driver delay.
Pedestrian delay and amenity: The ability of people to crossroads, and the effect on the relative pleasantness of a pedestrian journey	Negligible	Negligible	Not significant	There are no footways or pedestrian amenities nearby the Site access point on the A4233 Trebanog Road and therefore the movements will not affect pedestrians. However, the proposed construction vehicle access crosses an existing PRow. This will be managed through appropriate measures set out in the CTMP for the duration of the proposed construction works. After this point the impact on the PRow would be minimal with the access being used sparingly for routine maintenance vehicles in the operational phase.
Fear and intimidation: The levels experienced by pedestrians and cyclists, its proximity to people or the lack of protection caused by such	Negligible	Negligible	Not significant	There are no footways, cycle routes or pedestrian amenities nearby the Site access point and therefore the movements will not affect pedestrians or cyclists.

Receptor and summary of predicted effects	Sensitivity/importance/value of receptor ¹	Magnitude of change ²	Significance ³	Summary rationale
factors as narrow pavement widths.				
Accident and safety: The risk of accidents occurring where development is expected to produce a change in the character of traffic	Negligible	Negligible	Not significant	The study area does not exhibit severe accident hot spots which need to be targeted with specific casualty reduction measures. The significance of the changes are considered to be negligible.

1. The sensitivity/importance/value of a receptor is defined using the criteria set out in **Section 12.8** and is defined as negligible, low, medium and high.
2. The magnitude of change on a receptor resulting from activities relating to the development is defined using the criteria set out in **Section 12.8** and is defined as negligible, low, medium and high.
3. The significance of the environmental effects is based on the combination of the sensitivity/importance/value of a receptor and the magnitude of change and is expressed as major (significant), moderate (potentially significant) or minor/negligible (not significant), subject to the evaluation methodology outlined in **Section 12.8**