

5. Transport and Travel

5.1. Introduction

- 5.1.1. This chapter of the ES assesses the potential transport impacts and considers the likely significant effects of the Proposed Development on the environment in respect of transport and travel.
- 5.1.2. The assessment encompasses the vehicular, pedestrian, cycling and public transport infrastructure in the vicinity of the Site, with the study area broadly encompassing: the Site, B4290, A465, and M4. It considers the potential transport impacts of the operation of the Proposed Development, as set out in the supporting Transport Assessment (TA) in Appendix 5.1, as well as the construction phase of the Proposed Development.
- 5.1.3. The planned construction is considered indicative at this stage and therefore, the assessment of transport impacts associated with construction, is based on the earthworks and strategic infrastructure installation phase as provided by PJA.
- 5.1.4. This chapter has been informed by the TA produced in support of the Proposed Development. The TA (see Appendix 5.1) should therefore be referred to for further information including detailed transport analysis.

5.2. Assessment criteria & methodology

Relevant Policy & Guidance Context

Guidance

- 5.2.1. This ES has been prepared in accordance with the following guidance documents:
- Institute of Environmental Management and Assessment (IEMA) Guidelines for the Environmental Assessment of Road Traffic (1993, IEMA Guidance); and
 - Department for Transport, 2019 Design Manual for Roads and Bridges (DMRB), LA 104 Environmental assessment and monitoring (formerly HA 205/08).
- 5.2.2. Taking into consideration the IEMA Guidance, the DMRB and the analysis presented within the TA, this ES will specifically consider:
- The impact of the construction and operation of the proposed development;
 - Indirect impacts associated with changes in traffic volumes as identified in the IEMA Guidance, including severance, driver and pedestrian delay, residential amenity and accidents and safety; and
 - The identification of potential mitigation measures to reduce or remedy any potential adverse effects in relation to transport and access related issues.

- 5.2.3. The DMRB provides guidance for determining the significance of environmental effects. The approach to assigning significance of effect, according to the DMRB, relies on reasoned argument, the professional judgement of competent experts and the use of effective consultation to ensure the advice and views of relevant stakeholders are considered.

National Planning Policy

- 5.2.4. Planning Policy Wales (PPW) (Edition 11, February 2021) sets out the land use planning policies of the Welsh Government (WG) and is supplemented by a series of Technical Advice Notes (TANs), WG Circulars and policy clarification letters.

- 5.2.5. PPW outlines that the planning system should enable people to access jobs and services through shorter, more efficient and sustainable journeys, by walking, cycling and public transport. The planning system can improve choice in transport and secure accessibility in a way which supports sustainable development, increases physical activity, improves health and helps to tackle the causes of climate change and airborne pollution by:

- Enabling more sustainable travel choices;
- Network Management; and
- Demand Management.

- 5.2.6. It is considered that transport can also play a role in strategic and spatial choices, with strategic placemaking and good design fundamental to creating sustainable places where people want to live, work and socialise. PPW outlines the five key objectives of good design: access, movement, character, environmental sustainability and community safety, all of which transport plays a role.

- 5.2.7. TAN 18: Transport explains how an efficient and sustainable transport system is required for a modern, prosperous and inclusive society. The WG has a statutory duty towards sustainable development. TAN 18 describes how the WG intends to integrate land use and transport planning in order to achieve their outcomes with regard to climate change. The integration of land use planning can help achieve positive sustainable development outcomes by ensuring new development is located where it is accessible by public transport, walking and cycling.

- 5.2.8. Section 6 of TAN 18 explains that it is imperative that local councils take walking and cycling into consideration when assessing planning applications.

- 5.2.9. The Wales Transport Strategy 2021 A new Wales Transport Strategy (WTS) was published in 2021, setting out WG's vision for an accessible, sustainable and efficient transport system, which can contribute to a more prosperous, green and equal society.

- 5.2.10. The WTS is centred around the principle of achieving an integrated approach to transport, which will ensure that transport can address key issues to deliver wider commitments, through the following four pathways:

- Decarbonisation;

- Equality;
- Integrated Journey Planning; and
- Rural Transport.

5.2.11. The WTS sets out three short-term key priorities and four longer-term well-being ambitions for the transport system in Wales. The priorities and ambitions of the WTS have been developed with reference to the Sustainable Transport Hierarchy.

5.2.12. Active Travel (Wales) Act 2013 In September 2014, the Active Travel (Wales) Act 2013 was introduced by WG, making it a legal requirement for Local Authorities to map and plan suitable routes for Active Travel (within certain settlements within PCC as designated by WG).

Local Planning Policy

5.2.13. Neath Port Talbot Local Development Plan (LDP) (2011 – 2026) guides the future development of Neath Port Talbot, providing a clear vision for the County Borough setting out where, when and how much new development can take place between 2011 – 2026. The LDP is underpinned by gathered evidence and is aligned with national and regional policies.

5.2.14. The Neath Port Talbot LDP sets out how existing assets located along the urbanised coastal belt will be enhanced and utilised to improve the economic and social outlook for the whole area, while improving the general environment. The LDP sets out a number of objectives through which this will be achieved and form the basis for policy development. Notable objectives which the LDP sets out to achieve include:

- Minimise the causes and consequences of climate change through reduced greenhouse gas emissions and adapt to climate change through consideration of its effects in the design and location of new development;
- Deliver sustainable, safe and confident communities and develop vibrant settlements supporting a range and mix of facilities and services;
- Provide an adequate supply, mix, type and tenure of housing within sustainable settlements to meet the needs of the projected population;
- Increase accessibility, promote active travel and encourage a shift to more sustainable modes of transport for people and freight; and
- Reduce impacts of traffic growth and congestion and promote the efficient and effective use of the transport network.

5.2.15. The strategy for Neath Port Talbot in the LDP aims to facilitate growth within Neath Port Talbot, primarily focusing on the coastal corridor but also reinvigorating the valley communities. Based on the strategy aims,

- 5.2.16. Development will be focused along the coastal corridor in Neath and Port Talbot, in recognition of the important role these settlements play within the wider context;
- Maximising the benefit of market interest along the coastal corridor and stimulating growth through delivery of strategic employment sites and strategic regeneration areas;
 - Development allocations have been selected in accordance with sustainable development principles to be in locations that take account of issues such as dependence on the private car, flood risk, air quality and access to facilities.

Assessment Methodology – Scope

- 5.2.17. The scope of the assessment of traffic and travel has been informed by the scoping discussions undertaken with Neath Port Talbot County Borough Council when determining the scope of the TA.
- 5.2.18. The assessment is based on the net change in traffic as a result of the Development and any improvements delivered as part of the Proposed Development. The significance criteria will establish the magnitude of any beneficial or adverse effects that the Proposed Development will have on the transport network.
- 5.2.19. The highway study area broadly extends to include the Site, B4290, A465, and M4.

Assessment Criteria

Highway Link Assessment

- 5.2.20. The methodology for assessing the transport and travel impacts of the Proposed Development is based on The Institute of Environmental Management & Assessment (IEMA) guidelines set out in 'The Guidelines for the Environmental Assessment of Road Traffic' (Institute of Environmental Management & Assessment).
- 5.2.21. The guidelines are primarily for the assessment of off-site traffic impacts associated with major new developments and are intended to complement professional judgement. The IEMA Guidelines recommend two rules to be considered then assessing the impact of development traffic on a highway link, which are considered as:
- Rule 1: include highway links where daily traffic flows will increase by more than 30%, or the number of HGVs will increase by more than 30%; and
 - Rule 2: include any specifically sensitive areas where daily traffic flows will increase by more than 10%.
- 5.2.22. The IEMA guidance is grounded in knowledge and experience of the environmental effects of traffic and acknowledges that traffic forecasting is not an exact science. The 30% threshold is taken from research and information relating to the environmental effects of traffic, with less than a 30% increase generally resulting in imperceptible changes in the environmental effects from traffic. At a simple level, the

guidance considers that projected changes in traffic flow of less than 10% create no environmental effect, hence the second threshold set out in Rule 2.

- 5.2.23. Specifically, sensitive areas as referred to in Rule 2 may include schools, nurseries, conservation areas, hospital/care homes, accident black spots or links with high pedestrian flows. The transport assessment area has been defined by these rules.

Significance of Effect

- 5.2.24. The significance of the environmental effects is determined by the combination of the magnitude of impact and the sensitivity of the affected receptor. The degree of significance has been determined in accordance with the DMRB guidance.

- 5.2.25. The DMRB guidance provides typical descriptors and criteria for the magnitude of impact (degree of change) and receptor sensitivity but does not provide specific descriptors for the assessment of road traffic. The DMRB guidance uses the terms value, sensitivity, and importance interchangeably. For this assessment sensitivity is used.

- 5.2.26. The significance of effect matrix (see **Table 5.1**) has been extracted from the DMRB guidance and will be used to inform the analysis within this assessment.

Table 5.1 Significance Matrix¹

Environmental Value (Sensitivity)	Magnitude of Impact (Degree of Change)					
		No Change	Negligible	Minor	Moderate	Major
	Very High	Neutral	Slight	Moderate or Large	Large or Very Large	Very Large
	High	Neutral	Slight	Slight or Moderate	Moderate or Large	Large or Very Large
	Medium	Neutral	Neutral or Slight	Slight	Moderate	Moderate or Large
	Low	Neutral	Neutral or Slight	Neutral or Slight	Slight	Slight or Moderate
	Negligible	Neutral	Neutral	Neutral or Slight	Neutral or Slight	Slight

5.2.27. The DMRB guidance indicates that change can be either beneficial or adverse, hence effects can also be either beneficial or adverse. In some cases, the significance is shown as being one of two alternatives. In these cases, a single description should be decided upon with reasoned judgement for the level of significance chosen.

5.2.28. For the purposes of this ES, a significance of effect of moderate or large is considered significant in EIA legislation terms and mitigation should be considered.

5.2.29. Where the existing baseline HGV or total traffic flows are low, an increase of only a few vehicles would produce a large change in magnitude whereas in real terms the effects of the increase in traffic may still be neutral or slight. Such an assessment requires appropriate professional judgement to be made and this is the approach that has been followed in this assessment.

5.2.30. The determination of the sensitivity of receptors and the magnitude of change specifically relating to road traffic have been informed by the IEMA guidelines, however as stated above a degree of professional judgement has been applied where appropriate.

Sensitivity of Receptors

5.2.31. The IEMA guidance states that a critical feature of Environmental Assessment is determining whether a given impact is significant. 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 whenever possible. Such judgements will include the assessment of the numbers of people experiencing a change in environmental impact.

¹ Source: DMRB LA 104 Revision 1 – Table 3.8.1

- 5.2.32. Categories of receptor sensitivity have been defined from the principles set out in the IEMA guidance, including:
- The need to identify particular groups or locations which may be sensitive to changes in traffic conditions; and
 - The identification of Links or locations where it is felt that specific environmental problems may occur.
- 5.2.33. Although not specifically identified within the IEMA guidance, it is considered necessary that residential properties and employment areas should be examined in the assessment. In broad terms, for this assessment the sensitivity of a receptor has been derived from an assessment of:
- The number of individual receptors (such as residents);
 - An empirical assessment on the basis of characteristics (such as condition and location); and
 - A receptor's ability to absorb change.
- 5.2.34. A summary of likely receptors is presented in **Table 5.2**.

Table 5.2 Sensitive Receptors

Receptor	Description
People at home	This includes local residents. In the absence of further guidance, it is considered that properties fronting the access corridor (carriageway) will be most susceptible to changes in traffic flows and composition. The level of susceptibility to change will reduce with increased distance from the carriageway and the shielding effects of mature hedges and trees.
People at Work Places	These include local businesses, most notably those within 50 metres of the access corridor (carriageway).
Sensitive Groups and Locations	This includes groups of sensitive people such as elderly people or children, and locations such as schools, nurseries, care homes or medical centres.
Pedestrians and Cyclists	This includes pedestrians and cyclists using the construction and operational traffic routes.
Existing Road Users	This includes road users (vehicles, cyclists, equestrian), travelling along construction and operational routes.

Magnitude of Impact

- 5.2.35. For this assessment, the categories for magnitude of impact have been derived from a combination of the IEMA guidance and the Department for Transport (DfT) website for Transport Analysis Guidance

(WebTAG). In all cases a degree of professional judgement is applied when determining the impact, considering all local conditions.

5.2.36. The broad categories used in this assessment are presented in **Table 5.3**.

Environmental Statement

Coed Darcy



Table 5.3 Magnitude of Impact

Potential Effect	Magnitude of Impact			
	Negligible	Minor	Moderate	Major
Generic Description				
All	The traffic generated creates no perceptible change on the operation of the surrounding highway network.	The traffic generated creates a scarcely perceptible change on the operation of the surrounding highway network.	The traffic generated creates a noticeable change on the operation of the surrounding highway network.	The traffic generated creates a significant change on the operation of the surrounding highway network.
Effect-Specific Description				
Severance (Pedestrian and Vehicular)	Little or no hindrance to pedestrian and vehicular movement. Change in total traffic flow of less than 30%.	All people wishing to make pedestrian and vehicular movements will be able to do so, but there will probably be some hindrance to movement. Change in total traffic flow of 30-60%.	Some people, particularly children and old people, are likely to be dissuaded from making journeys on foot. For others, pedestrian and vehicular journeys will be longer or less attractive. Change in total traffic flow of 60-100%.	People are likely to be deterred from making pedestrian and vehicular journeys to an extent sufficient to induce a reorganisation of their activities. Those who do make journeys on foot will experience considerable hindrance. Change in total traffic flow of greater than 100%.
Pedestrian Delay and Amenity (Including Fear and Intimidation)	Change in total traffic flow or HGV flow of less than 30%.	Change in total traffic flow or HGV flow of 30-60%.	Change in total traffic flow or HGV flow of greater than 60-100%.	Change in total traffic flow or HGV flow of greater than 100%.

Environmental Statement

Coed Darcy



Potential Effect	Magnitude of Impact			
	Negligible	Minor	Moderate	Major
Accidents and Safety	Professional judgement applied to assess the implications of local circumstances, and factors which may elevate or lessen risks of accidents.			
Residential Amenity	This encompasses traffic elements relating to the benefit enjoyed from physical external space, and to a lesser extent internal space, which is part of the private home. Professional judgement has been applied using the parameters set out below.			
	No or minimal perceptible change in the attractiveness of the residential environment. Little or no perceptible loss of benefit from physical external or internal space which is part of the private home.	Minor change in the attractiveness of the residential environment. A small and discontinuous reduction in the benefit from physical external or internal space which is part of the private home. Residents are unlikely to be dissuaded from using the physical external space which is part of the private home.	Moderate change in the attractiveness of the residential environment. Residents will have a moderate and discontinuous reduction in the benefit from physical external or internal space which is part of the private home. Residents may be dissuaded from using the physical external space which is part of the private home.	Major change in the attractiveness of the residential environment. Residents will have a major and continuous loss of the benefit from physical external or internal space which is part of the private home. Residents are highly likely to be dissuaded from using the physical external space which is part of the private home.
Driver Delay ²	There is no perceptible change in queuing and delay at local junctions.	There is a scarcely perceptible change in queuing and delay at local junctions.	There is a noticeable change in queuing and delay at local junctions.	There is a significant change in queuing and delay at local junctions.

² Assessed within the TA

Data Sources

- 5.2.37. The highway link assessment has been informed by Classified Turning Counts (CTCs) undertaken during the AM Peak (07:00-10:00) and PM Peak (16:00-19:00) periods on Thursday 16th September 2021. The CTCs were undertaken at the following locations:
- M4 Junction 43 – M4 (North) / A465 / M4 (South) / B4290;
 - M4 Junction 44 gyratory;
 - Gyratory of A465/ A474;
 - B4290 (East) / B4290 (South) / Ffordd Coed Darcy / B4290 Pen-Y-Heol (North);
 - B4290 Pen-Y-Heol (North) / Darcy Business Park / B4290 (South);
 - B4290 / Llandarcy Academy of Sport; and
 - A483 / B4290 / Ffordd Amazon.
- 5.2.38. In addition, an automatic traffic count (ATC) was undertaken at the following locations for a one-week period starting Wednesday 15th September 2021:
- B4290 (South);
 - B4290 (North); and
 - Crymlyn Road.
- 5.2.39. To inform mainline flow on the M4 between the junctions which CTCs data have been undertaken, DfT traffic count sites have been used. The M4 data is from 2019. These flows have been factored up to 2021 values using TEMPro. The TEMPro growth factors are provided in **Table 5.4**.
- 5.2.40. The locations of these count sites are shown in **Figure 5.1**.

Figure 5.1 – Traffic survey locations



5.2.41. Background traffic growth factors have been derived using TEMPro v7.2 and the NTM AF15 dataset for Neath Port Talbot 010. The traffic growth factors for AM and PM peak periods which have informed the assessment scenario traffic flows are outlined in **Table 5.4**.

Table 5.4 – TEMPro Growth Factors

Year From		Year To		AM Peak		PM Peak	
		Rural Motorway	Rural Trunk	Rural Minor	Rural Motorway	Rural Trunk	Rural Minor
2019	2021	1.0279	1.0196	1.0164	1.0276	1.0192	1.0161
2021	2023	1.0296	1.0129	1.0107	1.0299	1.0131	1.0110
2021	2036	1.1475	1.111	1.1016	1.1501	1.1134	1.104

5.2.42. The TA provides a detailed assessment of the scheme impact on the capacity of the local highway network during the AM and PM peak periods. This ES considers the environmental effects of the daily traffic movements associated with the proposed development. A conversion factor derived from the

B4290 ATCs has been applied to the AM and PM Peak turning movements for the B4290, and local roads and junctions to determine the AADT (Average Annual Daily Traffic) flows. Whilst a conversion factor derived from the DfT Transport Statistics TRA0307 have been used to determine AADT flows for motorway and 'A road' junctions and links.

Assessment Scenarios

- 5.2.43. To assess the potential effect of the Proposed Development, the assessment scenarios outlined in **Table 5.5** have been considered. These assessment scenarios align with the TA.

Table 5.5 – Assessment Scenarios

Scenario	Description
2021 Base Year (Do Nothing)	2021 surveyed traffic flows, plus TEMPro growth factor applied to historic DfT count sites on M4 mainline. Traffic flows then converted to AADT using conversion factor derived from ATC and DfT Transport Statistics TRA0307.
Construction Assessment	
2023 Future Assessment Year (Do Nothing)	TEMPro growth factor applied to the 2021 Base Year traffic flows. Traffic flows then converted to AADT using conversion factor derived from ATC and DfT Transport Statistics TRA0307.
2023 Future Assessment Year (Do Something)	TEMPro growth factor applied to the 2021 Base Year traffic flows. The forecast construction trip generation for the proposed development has been assigned onto the local highway network. Traffic flows then converted to AADT using conversion factor derived from ATC and DfT Transport Statistics TRA0307.
Operational Assessment	
2036 Future Assessment Year (Do Nothing)	TEMPro growth factor applied to the 2021 Base Year traffic flows. Traffic flows then converted to AADT using conversion factor derived from ATC and DfT Transport Statistics TRA0307.
2036 Future Assessment Year (Do Something)	TEMPro growth factor applied to the 2021 Base Year traffic flows. The forecast trip generation for the proposed development has been assigned onto the local highway network. Traffic flows then converted to AADT using conversion factor derived from ATC and DfT Transport Statistics TRA0307.

Cumulative Developments

- 5.2.44. The TA has taken into account the cumulative impact of committed development (i.e. development that is consented or allocated where there is a reasonable degree of certainty that construction will proceed within the next three years) which would have a targeted impact on the local highway network in the vicinity of the proposed development. The following committed development site has been identified that may have a cumulative impact. This site has been identified as a cumulative development and assessed in the Cumulative Effects section, later in this chapter.

- Heritage Gate Phase 2, a planning application was submitted in January 2019 for the development of up to 140 dwellings (P2019/0021). This application was granted permission in December 2019.

Assessment Area

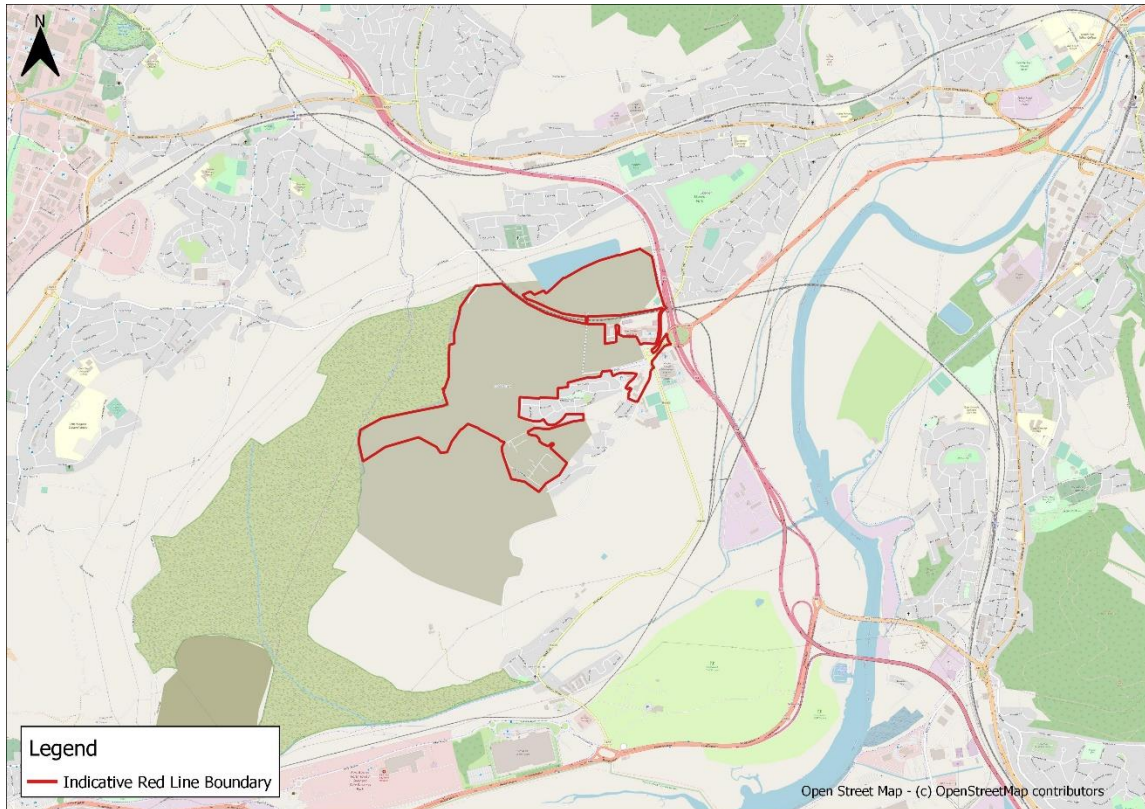
- 5.2.45. The assessment area is based upon the identification of links where traffic flows are forecast to increase by 30% (or the number of heavy goods vehicles will increase by more than 30%) or specifically sensitive areas where traffic flows are forecast to increase by 10%.

5.3. Baseline environment

Site Location

- 5.3.1. The Site, referred to as Coed Darcy, is located on the site of the former BP Oil Refinery at Llandarcy. The Coed Darcy development is located between Neath and Swansea, west of M4 Junction 43. Coed Darcy has good strategic road access to M4 Junction 43 and A465. The site location is shown in **Figure 5.2**.

Figure 5.2 – Site Location Plan



Local Highway Network

- 5.3.2. The Site has good access to the strategic road network (SRN). The Site is located adjacent to M4 Junction 43 which connects to the A465, and the M4. Eastbound the M4 provides access to South East Wales and beyond, and westbound to South West Wales. Access to Swansea is either via routes along the M4 to adjacent motorway junctions, or along the B4290 through Jersey Marine and onto the A483 Fabian Way.
- 5.3.3. **Ffordd Coed Darcy** is a single carriageway road subject to a 30mph speed limit which runs from the B4290 into Coed Darcy. At the approach to the B4290 junction the road splits into two lanes with a third lane at the junction for left turning traffic. There are shared use paths for cyclists and pedestrians on either side of the carriageway as well as street lighting.
- 5.3.4. The **B4290** is a single carriageway road which provides access to Skewen and Neath Abbey to the north of Coed Darcy, and the A483 and Jersey Marine to the south. The B4290 is subject to a 30mph speed limit between Jersey Marine and the A483. This section of the B4290 has a series of traffic calming measures and has a shared use path for pedestrians and cyclists. Between Llandarcy and Skewen the B4290 is subject to a 30mph speed limit, and there is lit pedestrian footway provision. Between Llandarcy and Jersey Marine the B4290 is subject to varying speed limits of 40mph, 50mph and 60mph. The B4290 is subject to a 7.5T weight restriction except for access to Jersey Marine village at the junction of A483 / B4290 and the M4 Junction 43/ B4290.

- 5.3.5. **Crymlyn Road** is a single carriageway road, subject to 30mph speed limit through the residential areas. Crymlyn Road provides access between Skewen and the village of Pentre-Dwr.
- 5.3.6. The **A465** is a dual-carriageway road subject to national speed limit. The A465 is an east-west road which runs between M4 Junction 43 at Llandarcy to Hereford. The A465 provides access to towns including Neath, Merthyr Tydfil, and Abergavenny.
- 5.3.7. The **A483** in the vicinity of the site is a dual-carriageway road which provides access between M4 Junction 42 and Swansea. The A483 forms a junction with the B4290 at the Ffordd Amazon Roundabout.
- 5.3.8. Coed Darcy is located adjacent to **M4 Junction 43**. The M4 is subject to national speed limit and provides access between South West Wales to the west and London to the east. The M4 is a heavily used road serving both strategic and local traffic.
- 5.3.9. The relative sensitivity of each of the road links described above has been determined utilising the sensitive receptors in **Table 5.2**. The road link sensitivity is summarised in **Table 5.6**.

Table 5.6 – Road Link Sensitivity

Link ID	Location	Description	Highly Sensitive Receptors on Link
1	A483, west of A483/ B4290/ Ffordd Amazon Roundabout	Dual carriageway road, 50mph speed limit. Forms part of the wider A483 corridor between M4 Junction 42 and Swansea. Shared use pedestrian and cyclist path provided on both sides of carriageway.	No
2	Ffordd Amazon	Dual carriageway road, 50 mph speed limit. Provides access between Amazon employment centre and A483/ B4290. Shared use pedestrian and cyclist path provided on both sides of carriageway.	No
3	B4290, north of A483 / B4290 / Ffordd Amazon Roundabout	Single carriageway road, 30 mph speed limit. Forms part of the wider B4290 corridor which provides access between A483 and Skewen. Shared use pedestrian and cyclist path provided on northbound carriageway	No
4	A483, east of A483 / B4290 / Ffordd Amazon Roundabout	Dual carriageway road, subject to national speed limit. Forms part of the wider A483 corridor between M4 Junction 42 and Swansea. Shared use pedestrian and cyclist path provided on both sides of carriageway.	No
5	B4290 Ashleigh Terrace	Single carriageway road in the village of Jersey Marine, 30mph speed limit. Forms part of the wider	Yes

Link ID	Location	Description	Highly Sensitive Receptors on Link
		B4290 corridor which provides access between A483 and Skewen. Residential properties fronting the carriageway through the village of Jersey Marine. Pedestrian footways are provided on both sides of the carriageway.	
6	B4290 New Road	Single carriageway road in the village of Jersey Marine, 30mph speed limit. Forms part of the wider B4290 corridor which provides access between A483 and Skewen. Residential properties fronting the carriageway through the village of Jersey Marine. Pedestrian footways are provided on both sides of the carriageway.	Yes
7	B4290, between Jersey Marine and B4290/Llandarcy	Single carriageway road, subject to varying speed limits between 40-60mph. Forms part of the wider B4290 corridor which provides access between A483 and Skewen.	No
8	Llandarcy	<i>Single carriageway road, subject to 30mph speed limit. Provides access to Llandarcy Park, NPTC Group of Colleges - Llandarcy Academy of Sport, Heritage Gate residential development. Pedestrian footway provided on southbound carriageway.</i>	Yes
9	B4290, between B4290 / Ffordd Coed Darcy Junction and B4290/Llandarcy Junction	Single carriageway road, subject to 30mph speed limit. Forms part of the wider B4290 corridor which provides access between A483 and Skewen. Shared use pedestrian and cyclist path provided on both sides of carriageway.	No
10	Ffordd Coed Darcy, between B4290 / Ffordd Coed Darcy Junction and Ffordd Coed Darcy / Heathland Way Junction	Dual carriageway road, subject to 30mph speed limit. Provides access to Coed Darcy Development. Employment areas properties set back from carriageway partially screened by vegetation. Shared use pedestrian and cyclist path provided on both sides of carriageway.	Yes

Link ID	Location	Description	Highly Sensitive Receptors on Link
11	B4290, east of B4290/Ffordd Coed Darcy Junction	Dual carriageway road, subject to 30mph speed limit. Provides access between wider B4290 corridor to A483 and Skewen, and M4 Junction 43. Harvester Pub fronting westbound carriageway partly screened by vegetation. Shared use pedestrian and cyclist path provided on westbound carriageway.	No
12	B4290, north of B4290/Ffordd Coed Darcy Junction	Single carriageway road, subject to 30mph speed limit. Provides access to Darcy Business Park and wider B4290 corridor. Shared use pedestrian and cyclist path provided on northbound carriageway.	No
13	Darcy Business Park, north of B4290/ Darcy Business Park Junction	Single carriageway road, subject to 20mph speed limit. Provides access to Darcy Business Park employment area. Employment properties fronting the carriageway. Pedestrian footway provided on northbound carriageway.	Yes
14	B4290, east of B4290 /Darcy Business Park Junction	Single carriageway road, subject to 30mph speed limit. Provides access between wider B4290 corridor to A483 and Skewen. Pedestrian footway provided on northbound carriageway. 2 residential properties fronting the carriageway. 3 employment properties set back from northbound carriageway partially screened by vegetation.	Yes
15	B4290, north east of M4 overbridge towards Skewen	Single carriageway road, subject to 30mph speed limit. Provides access between wider B4290 corridor to A483 and Skewen. Pedestrian footway provided on both sides of carriageway. Residential properties fronting the carriageway.	Yes
16	A465, east of M4 Junction 43	Dual carriageway road, subject to national speed limit. Provides access between M4 Junction 43, and wider A465 corridor including to Neath, and Merthyr Tydfil.	No
17	M4, mainline between Junction 42 and Junction 43	Motorway, subject to national speed limit.	No
18	M4, mainline between Junction 43 slip roads	Motorway, subject to national speed limit.	No

Link ID	Location	Description	Highly Sensitive Receptors on Link
19	M4 Junction 43 northbound off-slip	Motorway slip road, subject to national speed limit. Provides access from M4 to M4 Junction 43 for connections to B4290, and A465.	No
20	M4 Junction 43 northbound off-slip	Motorway slip road, subject to 40mph speed limit. Provides access from M4 to M4 Junction 43 for connections to B4290, and A465.	No
21	M4 Junction 43 southbound off-slip	Motorway slip road, subject to national speed limit. Provides access from M4 to M4 Junction 43 for connections to B4290, and A465.	No
22	M4 Junction 43 southbound off-slip	Motorway slip road, subject to 40mph speed limit. Provides access from M4 to M4 Junction 43 for connections to B4290, and A465.	No
23	M4 Junction 43 northbound on-slip	Motorway slip road, subject to national speed limit. Provides access to M4 from M4 Junction 43.	No
24	M4 Junction 43 southbound on-slip	Motorway slip road, subject to national speed limit. Provides access to M4 from M4 Junction 43.	No
25	M4, mainline between Junction 43 and Junction 44	Motorway, subject to national speed limit.	No
26	Crymlyn Road	Single carriageway road, subject to 30mph speed limit. Residential properties fronting carriageway. Pedestrian footway provided on both sides of the carriageway	Yes

Sustainable Transport

Pedestrian Access

- 5.3.10. Pedestrian access to local amenities within the vicinity of the Site is limited. Pedestrians can reach the Coed Darcy bus stop, BP Llandarcy bus stop, and BP Sports Club bus stop within a 10-minute walk of the B4290/Ffordd Coed Darcy access junction. Within a 20-minute walk, pedestrians can reach the outskirts of Skewen located to the north east of Coed Darcy.
- 5.3.11. In terms of footway provision in the vicinity of Coed Darcy, there is footway and shared use pedestrian and cyclist path provision along Ffordd Coed Darcy, the B4290 Pen-Y-Heol towards Skewen, and B4290 towards M4 Junction 43 which provides access to the shared use pedestrian and cyclist path which runs parallel with the M4 between Junction 43 and Junction 42 providing access to Briton Ferry. To the south of the B4290 /Ffordd Coed Darcy junction, there is a footway on the southbound carriageway to the

Llandarcy Industrial Area located between the B4290 and M4. There is a pedestrian footway on the northbound carriageway of Darcy Business Park which provides access from the B4290 pedestrian provision to the employment sites. On Llandarcy Road there is a footway on the northbound carriageway which provides access between Llandarcy Village Park and the B4290.

Cycle Access

- 5.3.12. Cyclists are able to reach the village of Skewen within a 10-minute cycle of the Site, and the towns of Neath and Briton Ferry are within a 20-minute cycle of the Site of the B4290/ Ffordd Coed Darcy junction. To the south of the Site, the village of Jersey Marine and employment site for Amazon can be reached within a 15-minute cycle ride.
- 5.3.13. Swansea Bay Cycle Routes provide high quality cycle routes serving both leisure and commuting purposes within Swansea and Neath Port Talbot area which cater for different cyclists proficiencies whilst connecting local towns and villages together³. The existing Coed Darcy access and B4290 Pen-Y-Heol form sections of two of the Swansea Bay Cycle Routes – Cross Valley and Skewen Link. Skewen Link provides access between Neath and the A483 south of Jersey Marine. This route provides a connection to other Swansea Bay Cycle Routes including the Central Line at the junction of the B4290/ A483, and Neath Valley route in Neath. All five of the different Swansea Bay Cycle Routes can be reached within a 20-minute cycle of the B4290/ Ffordd Coed Darcy access junction to Coed Darcy.

Public Transport

- 5.3.14. There are a range of bus services operating within the vicinity of the Site providing access to nearby towns and cities. The nearest bus stops to the Site are located on the B4290 (Coed Darcy bus stop, BP Llandarcy bus stop, and BP Sports Club bus stop) and are within a 10-minute walk of the B4290 / Ffordd Coed Darcy site access. There are bus shelters and timetable information at these stops. BP Sports Club has the greatest number of services providing frequent journeys towards Swansea and Neath.
- 5.3.15. The nearest Railway Station to Coed Darcy is Skewen Railway Station. The Railway Station is located within a 10-minute cycle of the B4290/ Ffordd Coed Darcy access junction to Coed Darcy. The number 155 bus serves Dynevor Road, and the number 38 bus serves the A4230 New Road, both of these roads are located adjacent to Skewen Railway Station which is located on Station Road.
- 5.3.16. Skewen Railway Station is located on the South Wales Main Line and is served by Transport for Wales Swanline regional trains. Skewen Railway Station provides train services between Swansea and Cardiff which typically run every two hours with extra services provided during peak periods. Some services for Swansea continue to Llanelli, Carmarthen and Milford Haven. There is no Sunday service from Skewen Railway Station.
- 5.3.17. Skewen Railway Station car park has 29 parking spaces, and the car park is free of charge. There are two uncovered bicycle storage stands at the station.
- 5.3.18. Neath Railway Station is located within a 20-minute cycle of the B4290/ Ffordd Coed Darcy access junction to Coed Darcy. Neath Railway Station is managed by Transport for Wales and is served by

³ Swansea Bay Cycle Routes - [Cycle Swansea Bay](#)

Transport for Wales and Great Western Railway trains. Train service destinations from this station include Swansea, Cardiff Central, Newport, London Paddington, Skewen, and Shrewsbury.

- 5.3.19. There are 64 car parking spaces and 5 accessible spaces at Neath Railway Station, and payment is required for parking. There are 8 bicycle storage spaces which are not covered.

Personal Injury Accident (PIA) Analysis

- 5.3.20. Personal Injury Accident (PIA) data for the latest five-year period available (2016 – 2020) has been collected. The study area covers the immediate highway network to the Site, and covers the A465, B4290, A483, and M4 Junction 43 slip roads. A review of PIA data is included within the TA. The PIA analysis undertaken does not provide any evidence to suggest that there is an existing highway safety issue which would be influenced by the proposed development.

5.4. Inherent design mitigation

- 5.4.1. This section outlines elements of the proposed development that have been assumed as in place when undertaking the highway link assessments and would be particularly important to ensure are retained.
- 5.4.2. The proposed development design includes footways, and off-road cycle paths which provide access within the proposed development but also connections to the existing pedestrian and cyclist infrastructure on the external highway network. In addition, walking and cycling connection points will be provided to enable future walking and cycling routes to nearby settlements. Pedestrian crossing points are to be provided at each of the site access junctions to enable pedestrians to safely cross the road. In addition, the proposed development design includes buses routing through the site, increasing the public transport provision.

5.5. Potential environmental impacts & effects

Assessment Area

- 5.5.1. The assessment area is based upon the identification of links where traffic flows are forecast to increase by more than 30%, or, the identification of links which are in the vicinity of a sensitive receptor and traffic flows are forecast to increase by more than 10%. Those links located in the immediate vicinity of the proposed development are forecast to experience the greatest increase in traffic flows.

Construction Phase

- 5.5.2. This section of the ES assesses the potential effects associated with the construction phase of the project. The construction phase of the project includes both HGV movements and vehicle trips associated with staff and operatives. It is important to note that the construction phase of the project is temporary.
- 5.5.3. It has been assumed that infrastructure works will commence in summer 2023, with house build starting in autumn/winter 2023, with the full development complete in 2036. For the purposes of this assessment, it is anticipated that the dwellings will be constructed as follows; 2024 40 dwellings, 2025 – 2026 140 dwellings per annum, 2027 – 2036 170 dwellings per annum.

5.5.4. The following assumptions have been made in relation to the construction phase of the project:

- 50 working weeks per annum;
- 5 working days per week; and
- 8 working hours per day.

5.5.5. Based on the construction timescales and assumptions, which are available at this stage of the project, during the earthworks and strategic infrastructure installation phase, it is assumed that there are two construction sites. One site located on the portion of land to the north of the railway line, and the second site located to the south of the railway line. It is assumed a separate construction programme for the north and south sites which will run concurrently. This means that approximately 30 construction worker vehicle trips will arrive/depart each of the sites in a day.

5.5.6. In terms of construction vehicles (HGVs) it is assumed that there will be 20 round trips per day between the north and south construction sites. These vehicles will travel between the north and south sites via the B4290.

5.5.7. The potential construction vehicle movements during the earthworks and strategic infrastructure installation phase are presented in **Table 5.7**.

Table 5.7 – Total Construction Trips per day (2023)

	HGVs	Workers	Total
Incoming	20	60	80
Outgoing	20	60	80
Total	40	120	160

5.5.8. As there is no firm information on where construction worker trips would be originating, Journey to Work Data from the 2011 Census has been used to inform worker trips. It has been assumed that 33% of the traffic will arrive at the site via the M4 (North), 27% via M4 (South), 22% via A465, 5% via B4290 (North), and 12% B4290 (South). The same distribution has been assumed for vehicles departing the site.

Construction Link Assessment

5.5.9. The traffic flows used in the construction link assessment for the Proposed Development are presented in **Table 5.8**.

5.5.10. **Table 5.8** provides a summary of the construction link assessment. The assessment considers those links within the vicinity of the site which will be used by all construction vehicles (HGVs and staff/operatives) based on the distribution assumptions identified. The analysis indicates if a link requires further assessment according to the percentage impact (of the additional construction vehicles) or proximity to sensitive receptors.

Environmental Statement

Coed Darcy



Table 5.8 – Construction Link Assessment⁴

Link ID	Location	2023 Future Base Two-Way AADT (Total Vehicles)	2023 Something Construction Two- Way AADT (Total Vehicles)	Do- Percentage Impact (Total Vehicles)	2023 Future Base Two-Way AADT (HGVs)	2023 Something Construction Two- Way AADT (HGVs)	Do- Percentage Impact (HGVs)	Further Assessment Required
1	A483, west of A483/ B4290/ Ffordd Amazon Roundabout	36,910	36,924	0.04%	1,117	1,117	0.00%	No
2	Ffordd Amazon	5,193	5,193	0.00%	506	506	0.00%	No
3	B4290, north of A483 / B4290 / Ffordd Amazon Roundabout	5,460	5,474	0.27%	144	144	0.00%	No
4	A483, east of A483 / B4290 / Ffordd Amazon Roundabout	37,158	37,158	0.00%	1,497	1,497	0.00%	No
5	B4290 Ashleigh Terrace	5,460	5,474	0.27%	144	144	0.00%	No
6	B4290 New Road	6,846	6,861	0.21%	367	367	0.00%	No

⁴ Values in table rounded

Environmental Statement

Coed Darcy



Link ID	Location	2023 Future Base Two-Way AADT (Total Vehicles)	2023 Do- Something Construction Two- Way AADT (Total Vehicles)	2023 Construction Percentage Impact (Total Vehicles)	2023 Future Base Two-Way AADT (HGVs)	2023 Do- Something Construction Two- Way AADT (HGVs)	2023 Construction Percentage Impact (HGVs)	Further Assessment Required
7	B4290, between Jersey Marine and B4290/ Llandarcy	6,846	6,861	0.21%	367	367	0.00%	No
8	Llandarcy	2,902	2,902	0.00%	93	93	0.00%	No
9	B4290, between B4290 / Ffordd Coed Darcy Junction and B4290/ Llandarcy Junction	8,906	8,920	0.16%	402	402	0.00%	No
10	Ffordd Coed Darcy, between B4290 / Ffordd Coed Darcy Junction and Ffordd Coed Darcy / Heathland Way Junction	2,707	2,807	3.69%	67	107	59.50%	Yes
11	B4290, east of B4290/ Ffordd Coed Darcy Junction	14,560	14,659	0.68%	445	445	0.00%	No

Environmental Statement

Coed Darcy



Link ID	Location	2023 Future Base Two-Way AADT (Total Vehicles)	2023 Do- Something Construction Two- Way AADT (Total Vehicles)	2023 Construction Percentage Impact (Total Vehicles)	2023 Future Base Two-Way AADT (HGVs)	2023 Do- Something Construction Two- Way AADT (HGVs)	2023 Construction Percentage Impact (HGVs)	Further Assessment Required
12	B4290, north of B4290/ Ffordd Coed Darcy Junction	9,402	9,502	1.06%	235	275	17.04%	No
13	Darcy Business Park, north of B4290/ Darcy Business Park Junction	1,803	1,803	0.00%	31	31	0.00%	No
14	B4290, east of B4290 / Darcy Business Park Junction	8,229	8,329	1.22%	198	238	20.24%	Yes
15	B4290, north east of M4 overbridge towards Skewen	4,655	4,662	0.14%	427	427	0.00%	No
16	A465, east of M4 Junction 43	55,735	55,761	0.05%	2,722	2,722	0.00%	No
17	M4, mainline between Junction 42 and Junction 43	98,758	98,791	0.03%	5,265	5,265	0.00%	No

Environmental Statement

Coed Darcy



Link ID	Location	2023 Future Base Two-Way AADT (Total Vehicles)	2023 Do- Something Construction Two- Way AADT (Total Vehicles)	2023 Construction Percentage Impact (Total Vehicles)	2023 Future Base Two-Way AADT (HGVs)	2023 Do- Something Construction Two- Way AADT (HGVs)	2023 Construction Percentage Impact (HGVs)	Further Assessment Required
18	M4, mainline between Junction 43 slip roads	70,318	70,319	0.00%	4,120	4,120	0.00%	No
19	M4 Junction 43, northbound off-slip	15,940	15,957	0.10%	808	808	0.00%	No
20	M4 Junction 43, northbound off-slip	15,940	15,957	0.10%	808	808	0.00%	No
21	M4 Junction 43, southbound off-slip	14,490	14,510	0.14%	537	537	0.00%	No
22	M4 Junction 43, southbound off-slip	14,490	14,510	0.14%	537	537	0.00%	No
23	M4 Junction 43, northbound on-slip	14,797	14,816	0.13%	564	564	0.00%	No
24	M4 Junction 43, southbound on-slip	16,051	16,067	0.10%	815	815	0.00%	No
25	M4, mainline between Junction 43 and Junction 44	101,845	101,885	0.04%	5,816	5,816	0.00%	No

Environmental Statement

Coed Darcy



Link ID	Location	2023 Future Base Two-Way AADT (Total Vehicles)	2023 Do- Something Construction Two- Way AADT (Total Vehicles)	2023 Construction Percentage Impact (Total Vehicles)	2023 Future Base Two-Way AADT (HGVs)	2023 Do- Something Construction Two- Way AADT (HGVs)	2023 Construction Percentage Impact (HGVs)	Further Assessment Required
26	Crymlyn Road	1,867	1,867	0.00%	93	93	0.00%	No

- 5.5.11. Of the links considered, the biggest proportional change is on Ffordd Coed Darcy (Link ID 10), where HGV traffic flows are expected to increase from 67 to 107 (representing a 59.5% increase) during the construction period. This large increase is mainly due to the fact that the road is currently only used to access the residential properties (circa. 300 dwellings) located off Heathland Way.
- 5.5.12. Assessment of the construction traffic flows generally indicates that there would be a negligible impact, and therefore no further assessment required.
- 5.5.13. However, it has been identified that Ffordd Coed Darcy (Link ID 10) and B4290 east of B4290/ Darcy Business Park Junction (Link ID 14) exceeds the IEMA threshold of 10% for assessment for sensitive links.
- 5.5.14. Further consideration has been given to these two links for their magnitude of change in relation to, severance, driver delay, pedestrian delay and amenity, accident and safety, and fear and intimidation.

Assessment of Significance of Effect

- 5.5.15. This section provides an assessment of the significance of likely effects left after incorporation of inherent measures set out in the Inherent Design Mitigation section. It should be noted that this assessment is prior to the implementation of any specific mitigation measures which are considered in the assessment of residual effects section of this chapter.
- 5.5.16. In accordance with the IEMA Guidance, determination of the significance of effect has been undertaken in consideration of the level of construction traffic impact that might reasonably be expected, in addition to how a receptor would be affected by the average or typical condition. Where multiple receptors are affected by any one potential effect, then the receptor with the highest level of sensitivity has been used in the calculation of the significance of effect.
- 5.5.17. As stated in defining of significant effects section of this chapter, the significance of the environmental effects are determined by the sensitivity of the affected receptor and the 'magnitude of impact'.
- 5.5.18. **Severance** affects those using non-motorised modes, especially pedestrians. Cyclists are less susceptible to severance because they can travel more quickly than people on foot and can use routes that pedestrians cannot. Specifically, severance refers to the level of crossing difficulty for pedestrians which may be caused by the introduction of additional traffic. Severance can also relate to quite minor increases in traffic flows if they impede pedestrian access to essential facilities.
- 5.5.19. The percentage increase in total traffic used to ascertain the magnitude of impact on severance is 3.69% on Ffordd Coed Darcy and 1.22% on B4290 (Link ID 14). This is unlikely to have an impact on severance in the area.
- 5.5.20. There is already a pedestrian crossing located on the Ffordd Coed Darcy arm of the B4290/ Coed Darcy signalised junction, and a pedestrian crossing located on the B4290 (East) arm of the B4290/Darcy Business Park junction. There is no reason to cross Ffordd Coed Darcy and B4290 (East) other than that at the crossings provided.

- 5.5.21. On the basis of this severance assessment, the sensitivity of receptors affected, pedestrians and cyclists is considered **low**, the magnitude of impact **negligible**, and the effects are considered to be **neutral**.
- 5.5.22. **Driver delay** has been measured in the associated Transport Assessment through junction capacity assessments of the junctions in the vicinity of the Site. The junction capacity assessment showed that the local highway network is forecast to operate within capacity in the AM and PM peak. Taking into account the sensitivity of the receptors affected (existing road users, **low to medium** sensitivity), the magnitude of impact **negligible**, the effects are assessed as **neutral**.
- 5.5.23. **Pedestrian delay, amenity and fear and intimidation** are affected by traffic flow, traffic composition and footway width and separation away from the carriageway. There are footways present along both sides of the carriageway on Ffordd Coed Darcy and on the B4290 east of B4290/ Darcy Business Park junction a continuous footway is provided along the eastbound carriageway, and a footway is provided on the westbound carriageway between the B4290/Darcy Business Park junction to BP Llandarcy bus stop.
- 5.5.24. The increase in HGVs has been used as a proxy for 'fear and intimidation' effects. However local circumstances have also been considered. Along Ffordd Coed Darcy, the increase in HGVs is predicted to be 59.50%, and 20.24% along B4290 (Link ID 14).
- 5.5.25. For pedestrian delay, amenity and fear and intimidation, the sensitivity of receptors affected, pedestrians is considered **low**. The magnitude of change (in terms of increase in HGVs) along Ffordd Coed Darcy is considered to be **minor**, and B4290 east **negligible**. During the construction works, 20 two-way HGV trips will be generated per day, an average of 2.5 two-way HGV trips per hour. The significance of effect is assessed as **neutral**.
- 5.5.26. **Accident and safety** – Personal Injury Accident (PIA) data for the area surrounding the proposed development has been obtained from NPTC for the most recent five-year period available (2016-2020). Analysis of the PIA data is presented in the associated Transport Assessment.
- 5.5.27. Given that the proposed development is expected to produce a change in traffic composition (i.e an increase in HGV movements), it is important that local circumstances or factors which may elevate or lessen risks of accidents, are taken into account when assessing the impact on road safety.
- 5.5.28. There have been zero accidents recorded within the most recent five-year period on Ffordd Coed Darcy or the B4290 east of B4290/ Darcy Business Park signalised junction. Further afield from the proposed development within the PIA study area, no accident clusters have been identified on the highway network.
- 5.5.29. For accident and safety, the sensitivity of road users, pedestrians and cyclists is considered to be **low to medium**. Due to the change in traffic composition and the increase in traffic flows during construction of the proposed development, particularly HGVs, the risk of accidents may slightly increase, so the magnitude of impact is considered to be **minor**. The significance of residual effect can be concluded to be no more than **slight**.
- 5.5.30. For the purpose of this assessment, **residential amenity** is defined as a general all-encompassing term relating to the attractiveness of the residential environment, most notably the benefit enjoyed from

physical external and internal space which is part of the private home. The assessment includes elements of noise disturbance, visual intrusion and air quality in general terms. The determination of the magnitude of effect has taken account of local circumstances and the nature of the locality but relies solely on professional judgement. Residential amenity in this case affects receptors including people at home such as residents of the dwellings located off Ffordd Coed Darcy and people who work at the employment premises off Ffordd Coed Darcy, and Darcy Business Park.

- 5.5.31. The residential and employment properties that front Ffordd Coed Darcy are set back from the carriageway and have some vegetation providing a screening between the dwellings and employment premises and carriageway, the sensitivity of these residential and employment properties is considered **medium**. The increase in traffic along B4290 (Link ID 14) towards Skewen will be felt more than that on Ffordd Coed Darcy as there is less screening between the carriageway and employment properties at Darcy Business Park. The sensitivity of the employment properties at Darcy Business Park is considered **high**. However, it is not anticipated that the increase in traffic flows along these links will result in a change in the attractiveness of the environment or physical external or internal space.
- 5.5.32. Taking into account how far set back the residential and employment properties are from the carriageway, the magnitude of impact is assessed as **negligible**, the effects are assessed as **slight**.
- 5.5.33. **Table 5.9** presents a summary of the links which have undergone significance of effect assessment for the construction phase of the proposed development.

Environmental Statement

Coed Darcy



Table 5.9 –Significance of Effect – Construction Links Assessment

Link ID	Link Description	Assessment	Effect-Specific Description				
			Severance	Driver Delay	Pedestrian amenity and delay, fear and intimidation	Accident and safety	Residential Amenity
10	Ffordd Coed Darcy, between B4290 / Ffordd Coed Darcy Junction and Ffordd Coed Darcy / Heathland Way Junction	Magnitude of Impact	Negligible	Negligible	Minor	Minor	Negligible
		Significance of Effect	Neutral	Neutral	Neutral	Slight	Slight
14	B4290, east of B4290 / Darcy Business Park Junction	Magnitude of Impact	Negligible	Negligible	Negligible	Minor	Negligible
		Significance of Effect	Neutral	Neutral	Neutral	Slight	Slight

Operational Phase

- 5.5.34. This Section of the ES assesses the potential effects associated with the operational phase of the Proposed Development. The potential effects have been considered against the 2036 Do-Something scenario outlined in **Table 5.5**. It is considered the assessment timescales (2036) are realistic for future year assessment and will give a realistic reflection of the future operation of the site.

Trip Generation & Distribution

- 5.5.35. For the purpose of the trip generation it is considered necessary to analyse the residential trips and commercial trips generated by the Proposed Development as the primary school and retail local centre would serve the Proposed Development and not generate any external peak hour vehicle trips.
- 5.5.36. TRICS was used to calculate a vehicular trip rate for Coed Darcy to provide an estimation of the external traffic which would be generated by the site. Residential trip rates have been extracted from the 03-Residential, A-Houses Privately Owned category, and commercial trips rates from 02-Employment, D-Industrial Estate. The forecast trip generation has been based on providing up to 2,000 additional dwellings, and 3,600m² of additional commercial land. The peak hour and daily trip generation anticipated from these land uses is presented in **Table 5.10**.

Table 5.10 – Vehicular Trip Generation

Land Use	AM Peak Hour (08:00-09:00)		PM Peak Hour (17:00-18:00)		Daily	
	Arrivals	Departures	Arrivals	Departures	Arrivals	Departures
03/A Residential Houses Privately Owned	274	716	682	300	3826	3866
02/D Employment Industrial Estate	28	18	9	23	238	236

- 5.5.37. On the basis of the above methodology, it is forecast that there will be a total of 8,166 two-way daily development trips.
- 5.5.38. The vehicle trips forecast in **Table 5.10** have been distributed on the local highway using Census 2011 Journey to Work data for Middle Super Output Area (MSOA) Neath Port Talbot 010. It has been assumed that 31% of the traffic will arrive at the site via the M4 (North), 35% via M4 (South), 12% via A465, 8% via B4290 (North), and 14% B4290 (South). The same distribution has been assumed for vehicles departing the Site.

Operational Link Assessment

- 5.5.39. The traffic flows used in the operational link assessment for the Proposed Development are presented in **Table 5.11**.
- 5.5.40. The traffic flows used in the operational link assessment for the Proposed Development are presented in **Table 5.11**. The assessment considers those links within the vicinity of the Site which will be used by traffic associated with the operation of the Proposed Development. The analysis indicates if a link requires further assessment according to the percentage impact or the proximity to sensitive receptors.

Environmental Statement

Coed Darcy



Table 5.11 – Operational Link Assessment⁵

Link ID	Location	2036 Future Base Two-Way AADT (Total Vehicles)	2036 Something Operational Way AADT (Total Vehicles)	Do- Two- Percentage Impact (Total Vehicles)	2036 Future Base Two-Way AADT (HGVs)	2036 Something Operational Way AADT (HGVs)	Do- Two- Percentage Impact (HGVs)	Further Assessment Required
1	A483, west of A483/ B4290/ Ffordd Amazon Roundabout	40,508	42,127	4.00%	1,226	1,244	1.49%	No
2	Ffordd Amazon	5,668	5,668	0.00%	552	552	0.00%	No
3	B4290, north of A483 / B4290 / Ffordd Amazon Roundabout	5,957	7,034	18.08%	157	167	6.79%	No
4	A483, east of A483 / B4290 / Ffordd Amazon Roundabout	40,781	41,323	1.33%	1,642	1,649	0.46%	No
5	B4290 Ashleigh Terrace	5,957	7,034	18.08%	157	167	6.79%	Yes
6	B4290 New Road	7,513	8,590	14.33%	403	413	2.64%	Yes

⁵ Values in table rounded

Environmental Statement

Coed Darcy



Link ID	Location	2036 Future Base Two-Way AADT (Total Vehicles)	2036 Something Operational Way AADT (Total Vehicles)	Do- Two- Percentage Impact (Total Vehicles)	2036 Future Base Two-Way AADT (HGVs)	2036 Something Operational Way AADT (HGVs)	Do- Two- Percentage Impact (HGVs)	Further Assessment Required
7	B4290, between Jersey Marine and B4290/Llandarcy	7,513	8,590	14.33%	403	413	2.64%	No
8	Llandarcy	3,166	3,166	0.00%	101	101	0.00%	No
9	B4290, between B4290 / Ffordd Coed Darcy Junction and B4290/Llandarcy Junction	9,716	10,793	11.08%	439	449	2.43%	No
10	Ffordd Coed Darcy, between B4290 / Ffordd Coed Darcy Junction and Ffordd Coed Darcy / Heathland Way Junction	2,707	7,615	181.27%	67	116	72.13%	Yes
11	B4290, east of B4290/Ffordd Coed Darcy Junction	15,885	22,518	41.76%	485	568	17.11%	Yes
12	B4290, north of B4290/Ffordd Coed Darcy Junction	10,258	13,846	34.98%	256	309	20.67%	Yes

Environmental Statement

Coed Darcy



Link ID	Location	2036 Future Base Two-Way AADT (Total Vehicles)	2036 Something Operational Way AADT (Total Vehicles)	Do- Percentage Impact (Total Vehicles)	2036 Future Base Two-Way AADT (HGVs)	2036 Something Operational Way AADT (HGVs)	Do- Percentage Impact (HGVs)	Further Assessment Required
13	Darcy Business Park, north of B4290/ Darcy Business Park Junction	1,803	3,328	84.58%	31	67	118.13%	Yes
14	B4290, east of B4290 / Darcy Business Park Junction	8,977	11,422	27.23%	216	243	12.86%	Yes
15	B4290, north east of M4 overbridge towards Skewen	5,109	5,854	14.58%	468	479	2.34%	Yes
16	A465, east of M4 Junction 43	61,194	62,174	1.60%	2,987	2,998	0.38%	No
17	M4, mainline between Junction 42 and Junction 43	110,176	113,341	2.87%	5,872	5,917	0.75%	No
18	M4, mainline between Junction 43 slip roads	78,453	78,453	0.00%	4,596	4,596	0.00%	No
19	M4 Junction 43, northbound off-slip	17,786	19,363	8.87%	901	923	2.39%	No

Environmental Statement

Coed Darcy



Link ID	Location	2036 Future Base Two-Way AADT (Total Vehicles)	2036 Do- Something Operational Two- Way AADT (Total Vehicles)	2036 Operational Percentage Impact (Total Vehicles)	2036 Future Base Two-Way AADT (HGVs)	2036 Do- Something Operational Two- Way AADT (HGVs)	2036 Operational Percentage Impact (HGVs)	Further Assessment Required
20	M4 Junction 43, northbound off-slip	17,786	19,363	8.87%	901	923	2.39%	No
21	M4 Junction 43, southbound off-slip	16,167	17,405	7.66%	598	612	2.19%	No
22	M4 Junction 43, southbound off-slip	16,167	17,405	7.66%	598	612	2.19%	No
23	M4 Junction 43, northbound on-slip	16,506	17,755	7.57%	629	644	2.27%	No
24	M4 Junction 43, southbound on-slip	17,904	19,492	8.87%	909	932	2.50%	No
25	M4, mainline between Junction 43 and Junction 44	113,623	116,111	2.19%	6,487	6,515	0.42%	No
26	Crymlyn Road	2,048	2,048	0.00%	102	102	0.00%	No

5.5.41. Of the links considered, the biggest proportional change is on Ffordd Coed Darcy (Link ID 10), where total traffic flows are expected to increase from 2,707 to 7,615 (representing a 181.27% increase) during the operational period. This large increase is mainly due to the fact that the road is currently only used to access the residential properties (circa. 300 dwellings) located off Heathland Way. Ffordd Coed Darcy is proposed to be the primary vehicular access point into the proposed development.

5.5.42. Assessment of the traffic flows generally indicates that there would be a negligible impact, and therefore no further assessment required. However, it has been identified that some links do exceed the 30% thresholds and require further assessment. This includes the following links:

- Link ID 10 - Ffordd Coed Darcy, between B4290 / Ffordd Coed Darcy Junction and Ffordd Coed Darcy / Heathland Way Junction;
- Link ID 11 - B4290, east of B4290/ Ffordd Coed Darcy Junction
- Link ID 12 - B4290, north of B4290/ Ffordd Coed Darcy Junction
- Link ID 13 - Darcy Business Park, north of B4290/ Darcy Business Park Junction

5.5.43. Further, there are also four links where there is a change in flow of over 10% on sensitive receptor links:

- Link ID 5 – B4290 Ashleigh Terrace
- Link ID 6 – B4290 New Road
- Link ID 14- B4290, east of B4290 / Darcy Business Park Junction
- Link ID 15 – B4290, north east of M4 overbridge towards Skewen

5.5.44. Further consideration has been given to these links for their magnitude of change in relation to, severance, driver delay, pedestrian delay and amenity, accident and safety, and fear and intimidation.

Assessment of Significance of Effect

5.5.45. This section provides an assessment of the significance of likely effects left after incorporation of inherent measures set out in the Inherent Design Mitigation section. It should be noted that this assessment is prior to the implementation of any specific mitigation measures which are considered in the assessment of residual effects section of this chapter.

5.5.46. In accordance with the IEMA Guidance, determination of the significance of effect has been undertaken in consideration of the level of operational traffic impact that might reasonably be expected, in addition to how a receptor would be affected by the average or typical condition. Where multiple receptors are affected by any one potential effect, then the receptor with the highest level of sensitivity has been used in the calculation of the significance of effect.

5.5.47. As stated in defining of significant effects section of this chapter, the significance of the environmental effects are determined by the sensitivity of the affected receptor and the 'magnitude of impact'.

- 5.5.48. **Severance** affects those using non-motorised modes, especially pedestrians. Cyclists are less susceptible to severance because they can travel more quickly than people on foot and can use routes that pedestrians cannot. Specifically, severance refers to the level of crossing difficulty for pedestrians which may be caused by the introduction of additional traffic. Severance can also relate to quite minor increases in traffic flows if they impede pedestrian access to essential facilities.
- 5.5.49. There are already pedestrian footways along Ffordd Coed Darcy, B4290 between Ffordd Coed Darcy and Darcy Business Park, B4290 east of B4290/Ffordd Coed Darcy junction, B4290 east of B4290/Darcy Business Park junction, and B4290 through Jersey Marine. In addition to pedestrian footways, there are pedestrian crossings located on the Ffordd Coed Darcy and B4290 (South) arms of the B4290/ Coed Darcy signalised junction, and pedestrian crossing points on the Darcy Business Park and B4290 (East) arms of the B4290/ Darcy Business Park signalised junction. The existing pedestrian footway along Darcy Business Park will be upgraded as part of the inherent design mitigation as part of the scheme. The sensitivity of these links for pedestrians and cyclists is considered **low**.
- 5.5.50. The percentage increase in total traffic used to ascertain the magnitude of impact on severance is 181.27% on Ffordd Coed Darcy, and 84.58% on Darcy Business Park.
- 5.5.51. On the basis of this severance assessment, Ffordd Coed Darcy sensitivity of receptors affected pedestrians and cyclists is considered **low**, magnitude of impact on severance is considered **major**, and the effects are considered to be **slight**. For Darcy Business Park, the sensitivity of receptors affected, pedestrians and cyclists is considered **low**, the magnitude of impact on severance **moderate**, and the effects are considered to be **slight**.
- 5.5.52. **Driver delay** has been measured in the associated Transport Assessment through junction capacity assessments of the junctions in the vicinity of the Site. The junction capacity assessment showed that the local highway network is forecast to operate within capacity in the AM and PM peak. Taking into account the sensitivity of the receptors affected (existing road users, **low to medium** sensitivity), the magnitude of impact varies across the links from **negligible to moderate**, the effects are assessed as no more than **slight**.
- 5.5.53. **Pedestrian delay, amenity and fear and intimidation** are affected by traffic flow, traffic composition and footway width and separation away from the carriageway. There are footways present along both sides of the carriageway on Ffordd Coed Darcy and the B4290(E) towards Skewen, the westbound carriageway of the B4290(E), and the northbound carriageway of the B4290 north of the B4290/ Ffordd Coed Darcy signalised junction. The pedestrian footway on the B4290 north of the B4290/ Ffordd Coed Darcy is separated from the carriageway by a safety barrier. In Jersey Marine, there are footways present along both sides of the carriageway on B4290 Ashleigh Terrace, on the B4290 New Road there is a continuous footway on the northbound carriageway, and on the southbound carriageway the footway runs between Jersey Marine village to New Road bus stop. There is partial footway provision along the northbound carriageway of Darcy Business Park, this footway is to be upgraded as part of the inherent design mitigation of the scheme to improve access within the proposed development.
- 5.5.54. The increase in HGVs has been used as a proxy for 'fear and intimidation' effects. However local circumstances have also been considered. Along Ffordd Coed Darcy, the increase in HGVs is predicted to be 72.13%, and 118.13% along Darcy Business Park.

- 5.5.55. For pedestrian delay, amenity and fear and intimidation, the sensitivity of receptors affected, pedestrians is considered **low** on Darcy Business Park and Ffordd Coed Darcy. The magnitude of change (in terms of increase in HGVs) is considered to be **major** for Darcy Business Park, and **moderate** for Ffordd Coed Darcy. The effects are assessed as **slight** for Darcy Business Park and Ffordd Coed Darcy.
- 5.5.56. **Accident and safety** – Personal Injury Accident (PIA) data for the area surrounding the proposed development has been obtained from NPTC for the most recent five-year period available (2016-2020). Analysis of the PIA data is presented in the associated Transport Assessment.
- 5.5.57. Given that the proposed development is expected to produce a change in traffic composition (i.e an increase in both total traffic as well as HGV movements), it is important that local circumstances or factors which may elevate or lessen risks of accidents, are taken into account when assessing the impact on road safety.
- 5.5.58. There have been three 'slight' accidents on B4290 Ashleigh Terrace within the most recent five-year period. The other links which exceed IEMA criteria thresholds have recorded zero accidents within the most recent five-year period. Further afield from the proposed development within the PIA study area, no accident clusters have been identified on the highway network.
- 5.5.59. For accident and safety, the sensitivity of road users, pedestrians and cyclists is considered to be **low to medium**. Due to the change in traffic composition and the increase in traffic flows as a result of the proposed development, the risk of accidents may slightly increase, so the magnitude of impact is considered to be **minor**. On the basis of this assessment of the magnitude of impact, and the sensitivity of road users, pedestrians and cyclists being low to medium, the significance of residual effect can be concluded to be no more than **slight**.
- 5.5.60. For the purpose of this assessment, **residential amenity** is defined as a general all-encompassing term relating to the attractiveness of the residential environment, most notably the benefit enjoyed from physical external and internal space which is part of the private home. The assessment includes elements of noise disturbance, visual intrusion and air quality in general terms. The determination of the magnitude of effect has taken account of local circumstances and the nature of the locality but relies solely on professional judgement. Residential amenity in this case affects receptors including people at home such as residents of the dwellings located on Ffordd Coed Darcy, B4290 in Jersey Marine, B4290 towards Skewen and people who work at the employment premises on Ffordd Coed Darcy and at Darcy Business Park.
- 5.5.61. The residential and employment properties that front Ffordd Coed Darcy are set back from the carriageway and have some vegetation providing a screening between the dwellings and employment premises and carriageway, their sensitivity is considered **medium**. The increase in traffic along Darcy Business Park and B4290 (E) towards Skewen will be felt more than that on Ffordd Coed Darcy as there is less screening between the carriageway and employment properties, sensitivity is considered **high**. The residential properties located along the B4290 in Jersey Marine and towards Skewen are located close to the carriageway with minimal screening or vegetation cover, sensitivity is considered **high**. However, it is not anticipated that the increase in traffic flows along these links will result in a change in the attractiveness of the environment or physical external or internal space.

- 5.5.62. Taking into account how far set back the residential and employment properties are from the carriageway, the additional number of trips going through each of the links, the impact on attractiveness, and loss of external or internal space, the magnitude of impact is assessed as **negligible** on all links, the effects are assessed as no more than **slight**.
- 5.5.63. **Table 5.12** presents a summary of the links which have undergone significance of effect assessment for the operational phase of the proposed development. It is considered that no mitigation measures are deemed necessary to alleviate specific environmental effects. Therefore, no residual environmental effects with respect to traffic and access are considered likely.

Table 5.12 –Significance of Effect – Operational Link Assessment

Link ID	Link Description	Assessment	Effect-Specific Description				
			Severance	Driver Delay	Pedestrian delay, amenity and fear and intimidation	Accident and safety	Residential Amenity
5	B4290 Ashleigh Terrace	Magnitude of Impact	Negligible	Negligible	Negligible	Minor	Negligible
		Significance of Effect	Neutral	Neutral	Neutral	Slight	Slight
6	B4290 New Road	Magnitude of Impact	Negligible	Negligible	Negligible	Minor	Negligible
		Significance of Effect	Neutral	Neutral	Neutral	Slight	Slight
10	Ffordd Coed Darcy, between B4290 / Ffordd Coed Darcy Junction and Ffordd Coed Darcy / Heathland Way Junction	Magnitude of Impact	Major	Moderate	Moderate	Minor	Negligible
		Significance of Effect	Slight	Slight	Slight	Slight	Neutral
11	B4290, east of B4290/ Ffordd Coed Darcy Junction	Magnitude of Impact	Minor	Moderate	Negligible	Minor	Negligible
		Significance of Effect	Neutral	Slight	Neutral	Slight	Neutral
12	B4290, north of B4290/ Ffordd	Magnitude of Impact	Minor	Moderate	Negligible	Minor	Negligible

Environmental Statement

Coed Darcy



Link ID	Link Description	Assessment	Effect-Specific Description				
			Severance	Driver Delay	Pedestrian delay, amenity and fear and intimidation	Accident and safety	Residential Amenity
	Coed Darcy Junction	Significance of Effect	Neutral	Slight	Neutral	Slight	Neutral
13	Darcy Business Park, north of B4290/ Darcy Business Park Junction	Magnitude of Impact	Moderate	Moderate	Major	Minor	Negligible
		Significance of Effect	Slight	Slight	Slight	Slight	Slight
14	B4290, east of B4290 / Darcy Business Park Junction	Magnitude of Impact	Negligible	Minor	Negligible	Minor	Negligible
		Significance of Effect	Neutral	Neutral	Neutral	Slight	Slight
15	B4290, north east of M4 overbridge towards Skewen	Magnitude of Impact	Negligible	Minor	Negligible	Minor	Negligible
		Significance of Effect	Neutral	Neutral	Neutral	Slight	Slight

5.6. Additional mitigation, compensation & enhancement measures

- 5.6.1. Although the Development impacts, from an EIA perspective, are largely considered negligible, a range of measures are proposed on the surrounding highway network.

Construction Phase

- 5.6.2. A Construction Traffic Management Plan (CTMP) will be produced by the building contractor (when known). This document will reduce the impact of construction traffic on the highway network in the vicinity of Coed Darcy by providing a set of measures that will be undertaken during construction of the Development. Examples of measures included in a CTMP are restricting construction traffic movements to outside the peak hours and ensuring all HGVs are subject to a wheel wash before leaving the Site to ensure mud is not transferred to the local highway network.

Operational Phase

- 5.6.3. For the operational phase, mitigation measures take the form of physical junction improvements at M4 Junction 43 (design improvements appended in the TA), as well as the introduction of a Travel Plan at the Site.
- 5.6.4. To enhance public transport provision at the Site by diverting existing services into the site and increasing service frequency.

5.7. Residual environment impacts & effects

- 5.7.1. Residual effects are those predicted following consideration of any proposed mitigation measures. The assessment has identified that all effects from the Proposed Development are considered to be negligible.

5.8. Cumulative effects

- 5.8.1. This section considers potential for cumulative effects of the Proposed Development, and those of the Proposed Development in combination with committed developments. Heritage Gate Phase II is the only committed development included as part of this assessment.
- 5.8.2. Heritage Gate Phase II is proposed for 140 dwellings located off Llandarcy, to the south of Ffordd Coed Darcy. The Transport Statement (TS) (November 2018), provided peak hour operational trips, but did not provide construction traffic figures. However, given the type of land use it is anticipated that Heritage Gate Phase II would generate more trips during operation than construction and therefore, operational traffic generation has been used to assess the impact. The Heritage Gate Phase II TS assumes 476 round trips per day during the operational phase. Given that Heritage Gate Phase II is located immediately to the south of the Proposed Development at Coed Darcy, it is considered reasonable to assume that the operational traffic would use the same access route to and from the site.
- 5.8.3. **Table 5.13** illustrates the percentage impact the construction traffic (total vehicles) of the Coed Darcy scheme would have on the local highway network when taking into account the proposed operational traffic of Heritage Gate Phase II.

Table 5.13 –Cumulative Impact – Construction Link Assessment⁶

Link ID	Location	2023 Base AADT (Total Vehicles)	Future Two-Way (Total Vehicles)	Heritage Phase II Two-Way AADT (Total Vehicles)	Gate Two-Way AADT (Total Vehicles)	2023 Base + Future + Cumulative Traffic Darcy Construction Two-Way AADT (Total Vehicles)	Base + Coed Cumulative Percentage Impact (Total Vehicles)	
1	A483, west of A483/B4290/ Ffordd Amazon Roundabout	36,910		133		37,043	37,057	0.04%
2	Ffordd Amazon	5,193		0		5,193	5,193	0.00%
3	B4290, north of A483 / B4290 / Ffordd Amazon Roundabout	5,460		133		5,593	5,608	0.26%
4	A483, east of A483 / B4290 / Ffordd Amazon Roundabout	37,158		0		37,158	37,158	0.00%
5	B4290 Ashleigh Terrace	5,460		133		5,593	5,608	0.26%
6	B4290 New Road	6,846		133		6,979	6,994	0.21%
7	B4290, between Jersey Marine and B4290/Llandarcy	6,846		133		6,979	6,994	0.21%
8	Llandarcy	2,902		952		3,854	3,854	0.00%
9	B4290, between B4290 / Ffordd Coed Darcy Junction and B4290/Llandarcy Junction	8,906		819		9,724	9,739	0.15%
10	Ffordd Coed Darcy, between B4290 / Ffordd Coed Darcy Junction	2,707		0		2,707	2,807	3.69%

⁶ Values in table rounded

Environmental Statement

Coed Darcy



Link ID	Location	2023 Base AADT (Total Vehicles)	Future Two-Way (Total Vehicles)	Heritage Phase II Two-Way AADT (Total Vehicles)	2023 Base + Future Heritage Gate Phase II Two-Way AADT (Total Vehicles)	2023 Base + Future Cumulative Traffic + Coed Darcy Construction Two-Way AADT (Total Vehicles)	Cumulative Percentage Impact (Total Vehicles)
	and Ffordd Coed Darcy / Heathland Way Junction						
11	B4290, east of B4290/ Ffordd Coed Darcy Junction	14,560		743	15,303	15,402	0.65%
12	B4290, north of B4290/ Ffordd Coed Darcy Junction	9,402		76	9,478	9,578	1.06%
13	Darcy Business Park, north of B4290/ Darcy Business Park Junction	1,803		0	1,803	1,803	0.00%
14	B4290, east of B4290 / Darcy Business Park Junction	8,229		76	8,305	8,405	1.20%
15	B4290, north east of M4 overbridge towards Skewen	4,655		76	4,731	4,738	0.14%
16	A465, east of M4 Junction 43	55,735		114	55,850	55,876	0.05%
17	M4, mainline between Junction 42 and Junction 43	98,758		333	99,091	99,124	0.03%
18	M4, mainline between Junction 43 slip roads	70,319		0	70,319	70,319	0.00%
19	M4 Junction 43, northbound off-slip	15,940		167	16,107	16,123	0.10%
20	M4 Junction 43, northbound off-slip	15,940		167	16,107	16,123	0.10%

Link ID	Location	2023 Base AADT (Total Vehicles)	Future Two-Way (Total Vehicles)	Heritage Gate Phase II Two-Way AADT (Total Vehicles)	2023 Base + Future Heritage Gate Phase II Two-Way AADT (Total Vehicles)	2023 Base + Future Coed Darcy Construction Traffic Two-Way AADT (Total Vehicles)	Cumulative Percentage Impact (Total Vehicles)
21	M4 Junction 43, southbound off-slip	14,490		148	14,638	14,658	0.14%
22	M4 Junction 43, southbound off-slip	14,490		148	14,638	14,658	0.14%
23	M4 Junction 43, northbound on-slip	14,797		148	14,944	14,964	0.13%
24	M4 Junction 43, southbound on-slip	16,051		167	16,217	16,234	0.10%
25	M4, mainline between Junction 43 and Junction 44	101,845		295	102,140	102,180	0.04%
26	Crymlyn Road	1,867		0	1,867	1,867	0.00%

5.8.4. **Table 5.13** shows that whilst the cumulative development increases the overall traffic levels on some of the links on the local highway network surrounding Coed Darcy, the percentage impact of Coed Darcy construction traffic on the local highway network is reduced compared to the construction percentage impact presented in **Table 5.8** . Therefore, the summary of potential effects on highway links outlined in a previous section of this chapter for the construction phase remain relevant.

5.8.5. **Table 5.14** illustrates the percentage impact the operational traffic (total vehicles) of the Coed Darcy scheme would have on the local highway network when taking into account the proposed operational traffic of Heritage Gate Phase II.

Table 5.14 –Cumulative Impact – Operational Link Assessment⁷

Link ID	Location	2036 Base AADT (Total Vehicles)	Future Two-Way (Total Vehicles)	Heritage Phase II Two-Way AADT (Total Vehicles)	Gate Two-Way AADT (Total Vehicles)	2036 Base + Future Heritage Gate Phase II Two-Way AADT (Total Vehicles)	2036 Base + Future Cumulative Traffic + Coed Darcy Operational Two-Way AADT (Total Vehicles)	Cumulative Percentage Impact (Total Vehicles)
1	A483, west of A483/B4290/ Ffordd Amazon Roundabout	40,508		133		40,641	42,260	3.98%
2	Ffordd Amazon	5,668		0		5,668	5,668	0.00%
3	B4290, north of A483 / B4290 / Ffordd Amazon Roundabout	5,957		133		6,090	7,167	17.68%
4	A483, east of A483 / B4290 / Ffordd Amazon Roundabout	40,781		0		40,781	41,323	1.33%
5	B4290 Ashleigh Terrace	5,957		133		6,090	7,167	17.68%
6	B4290 New Road	7,513		133		7,646	8,723	14.08%
7	B4290, between Jersey Marine and B4290/Llandarcy	7,513		133		7,646	8,723	14.08%
8	Llandarcy	3,166		952		4,118	4,118	0.00%
9	B4290, between B4290 / Ffordd Coed Darcy Junction and B4290/Llandarcy Junction	9,716		819		10,535	11,612	10.22%
10	Ffordd Coed Darcy, between B4290 / Ffordd Coed Darcy Junction and Ffordd Coed Darcy / Heathland Way Junction	2,707		0		2,707	7,615	181.27%

⁷ Values in table rounded

Environmental Statement

Coed Darcy



Link ID	Location	2036 Base AADT (Total Vehicles)	Future Two-Way AADT (Total Vehicles)	Heritage Gate Phase II Two-Way AADT (Total Vehicles)	2036 Base + Future Heritage Gate Phase II Two-Way AADT (Total Vehicles)	2036 Base + Cumulative Traffic + Coed Darcy Operational Two-Way AADT (Total Vehicles)	Cumulative Percentage Impact (Total Vehicles)
11	B4290, east of B4290/ Ffordd Coed Darcy Junction	15,885		743	16,627	23,261	39.89%
12	B4290, north of B4290/ Ffordd Coed Darcy Junction	10,258		76	10,334	13,922	34.72%
13	Darcy Business Park, north of B4290/ Business Park Junction	1,803		0	1,803	3,328	84.58%
14	B4290, east of B4290 / Darcy Business Park Junction	8,977		76	9,054	11,498	27.00%
15	B4290, north east of M4 overbridge towards Skewen	5,109		76	5,185	5,930	14.37%
16	A465, east of M4 Junction 43	61,194		114	61,308	62,289	1.60%
17	M4, mainline between Junction 42 and Junction 43	110,176		333	110,509	113,674	2.86%
18	M4, mainline between Junction 43 slip roads	78,453		0	78,453	78,453	0.00%
19	M4 Junction 43, northbound off-slip	17,786		167	17,952	19,529	8.78%
20	M4 Junction 43, northbound off-slip	17,786		167	17,952	19,529	8.78%
21	M4 Junction 43, southbound off-slip	16,167		148	16,315	17,552	7.59%

Link ID	Location	2036 Base AADT	Future Two-Way (Total Vehicles)	Heritage Phase II Two-Way AADT (Total Vehicles)	2036 Base + Future Gate Phase II Two-Way AADT (Total Vehicles)	2036 Base + Coed Darcy Operational Two-Way AADT (Total Vehicles)	Cumulative Percentage Impact (Total Vehicles)
22	M4 Junction 43, southbound off-slip	16,167		148	16,315	17,552	7.59%
23	M4 Junction 43, northbound on-slip	16,506		148	16,653	17,903	7.50%
24	M4 Junction 43, southbound on-slip	17,904		167	18,070	19,659	8.79%
25	M4, mainline between Junction 43 and Junction 44	113,623		295	113,919	116,406	2.18%
26	Crymlyn Road	2,048		0	2,048	2,048	0.00%

5.8.6. **Table 5.14** shows that whilst the cumulative development increases the overall traffic levels on some of the links on the local highway network surrounding Coed Darcy, the percentage impact of Coed Darcy operational traffic on the local highway network is reduced compared to the operational percentage impact presented in **Table 5.11**. Therefore, the summary of potential effects on highway links outlined in a previous section of this chapter for the operational phase remain relevant.

5.9. Assessment summary

5.9.1. The impact of the Proposed Development on transport and access, during both the construction and operational phases, has been assessed on the highway network surrounding the Site.

5.9.2. The assessment has been undertaken in line with IEMA guidelines set out in 'The Guidelines for the Environmental Assessment of Road Traffic' (Institute of Environmental Management & Assessment). The guidelines are primarily for the assessment of off-site traffic impacts associated with major new developments, and are intended to complement professional judgement. The IEMA Guidelines recommend two rules to be considered when assessing the impact of development traffic on a highway links, which are considered as:

- Include highway links where daily traffic flows will increase by more than 30%, or the number of HGVs will increase by more than 30%; and
- Include any specifically sensitive areas where daily traffic flows will increase by more than 10%.

- 5.9.3. The impact of construction traffic on key road links is considered negligible.
- 5.9.4. Assessment of the construction traffic flows (during the construction phase) generally indicates that there would be a negligible impact on the road links as shown in **Table 5.8**. Further consideration has been given to where there is a change in flow of over 30% and where there is a change in flow of over 10% on sensitive receptors.
- 5.9.5. The review of these links has identified that Ffordd Coed Darcy (Link ID 10), and B4290 east of B4290 / Darcy Business Park Junction (Link ID 14) exceed the IEMA threshold of 10% for assessment for sensitive links. Further consideration has been given to these two links for their magnitude of change in relation to, severance, driver delay, pedestrian delay and amenity, accident and safety, and fear and intimidation. The significance of effect assessment for these two links found a neutral or slight effect across all of the specific effects which have been assessed.
- 5.9.6. Assessment of the traffic flows during the operational phase generally indicates that there would be a negligible impact on the road links as shown in **Table 5.11**. Further consideration has been given to where there is a change in flow of over 30% and where there is a change in flow of over 10% on sensitive receptors.
- 5.9.7. The review of these links has identified that four links exceed the IEMA threshold of 30%, and four links exceed the IEMA threshold of 10% for sensitive links. Further consideration has been given to these links for their magnitude of change in relation to severance, driver delay, pedestrian delay and amenity, accident and safety, and fear and intimidation. The significance of effect assessment for these links found a neutral or slight effect across all of the specific effects which have been assessed.
- 5.9.8. Whilst the impacts of the Proposed Development, from an EIA perspective, are largely considered negligible, a range of measures are proposed to mitigate the impact of the Proposed Development on the surrounding highway network. These measures are specified in more detail within the associated TA; they include a range of physical (junction and non-motorised user improvements) and Travel Planning and Construction Management Planning measures.
- 5.9.9. It is considered that the Proposed Development is acceptable from an environmental perspective. Complementary measures will also reduce the transport impact of the Proposed Development, further decreasing the negligible impact of the Proposed Development.