



## 5. Transport and Access

### Executive Summary

This chapter assesses the impact of the proposed development on road users, pedestrians, cyclists and all other users in terms of effects on severance, delay, amenity, fear and intimidation, and road safety. Any impacts to existing public transport as well as the potential for impacts on access to outdoor areas is also assessed.

The assessment identifies construction routes, construction traffic, and operational traffic associated with the proposed development. Changes in traffic flows were assessed in combination with its impacts and ultimately its effects based on the sensitivity of routes involved.

The assessment considered mitigation and enhancement embedded in the proposed development design and concludes that no receptors are likely to experience a significant effect (Moderate, Large, and Very Large) as a result of the proposed development's construction and operation.

There are no potential significant cumulative impacts when considered in combination with impacts identified for other developments.

No significant residual effects are anticipated for vehicle and non-motorised users, to continue accessing roads public transport or outdoor areas as they currently do, during construction and operation as a result of the proposed development.

## 5.1. Introduction

- 5.1.1. This chapter presents information required by the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017<sup>34</sup> (the 'EIA Regulations'). As part of the Environmental Impact Assessment (EIA) process, this Environmental Statement (ES) chapter reports the potential significant effects for Transport and Access as a result of the proposed development. This assessment includes a review of the existing baseline conditions, consideration of the potential impacts and identification of proportionate mitigation for likely significant adverse effects resulting from the proposed development, and the residual effects.
- 5.1.2. The approach to this assessment follows the EIA Scoping Report (March 2023) submitted to Pembrokeshire County Council (PCC) and has been prepared in accordance with the EIA Scoping Opinion (May 2023) for the proposed development from PCC. Subsequent consultation with PCC following the Scoping Opinion informed further refinements to the assessment approach and design of the proposed development. The methodology is in accordance with the Environmental Assessment of Traffic and Movement<sup>35</sup> (EATM). Reference is also made to guidance given in the Design Manual for Roads and Bridges<sup>36</sup> (DMRB) (Standards for Highways, 2025), as required.
- 5.1.3. Chapter 3 (Proposed Development) contains a detailed description of the proposed development. This chapter is supported by the following appendices and figures, and includes cross-references to other chapters and figures where appropriate:
- Appendix 5.1 (Bus Timetable);
  - Appendix 5.2 (Site Access Proposals);
  - Appendix 5.3 (Abnormal Loads Routeing Assessment);
  - Appendix 5.4 (Typical Daily Traffic Flows);
  - Figure 5.1 (Highway Network of Interest); and
  - Figure 5.2 (Traffic Count Locations).
- 5.1.4. Potential impacts relating to noise generated by traffic from construction of the proposed development have been considered in Chapter 7 (Noise and Vibration). The assessment has scoped out the need for assessing potential effects of operational traffic due to the predicted changes in road traffic during operation being below the relevant criteria for detailed assessment.

## 5.2. Legislation and Policy

- 5.2.1. The national legislation and regulatory frameworks applicable in this assessment for Transport and Access are summarised in this section.

### Legislation

- 5.2.2. There is no specific legislation of relevance to the assessment of Transport and Access.

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<sup>34</sup> The Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017. [Online] Available at: <https://www.legislation.gov.uk/wsi/2017/567/contents> [Accessed 28 October 2025].

<sup>35</sup> Institute of Environmental Management and Assessment (2023). Environmental Assessment of Traffic and Movement.

<sup>36</sup> Standards for Highways (2025). Design Manual for Roads and Bridges. [Online] Available at: <https://www.standardsforhighways.co.uk/dmrb/> [Accessed 28 October 2025].

### National Policy

5.2.3. The following national planning policy documents have been reviewed and considered as part of this assessment:

- Planning Policy Wales (edition 12)<sup>37</sup>;
- Technical Advice Note 18: Transport<sup>38</sup>;
- Wales Transport Strategy 2021<sup>39</sup>; and
- Future Wales: The National Plan 2040<sup>40</sup>.

### **PPW**

5.2.4. Planning Policy Wales (PPW) 2024 sets out the Welsh Government's planning policy framework for the whole of Wales, including the Welsh Government's expectation for the content and quality of planning applications and local plan policy. The primary goal of PPW is to ensure that the planning system advances sustainable development and enhances the well-being of Wales, aligning with the Planning (Wales) Act 2015<sup>41</sup>, the Well-being of Future Generations (Wales) Act 2015<sup>42</sup>, and other relevant legislation.

5.2.5. The PPW sets out the policy which the proposed development should comply with. It is also the basis for informing a judgement on the impacts of a development, for example, whether the proposed development is consistent with the requirements of the PPW. Compliance of the proposed development with the PPW is detailed within the Planning Statement.

5.2.6. With regards to transport, Chapter 4 (Active and Social Places) of the PPW states that development proposals in Wales must prioritise sustainable transport by enhancing walking, cycling, and public transport accessibility from the start, including provision of on-site and off-site infrastructure improvements. However, it is recognised that different approaches to sustainable transport will be required in different parts of Wales, particularly in rural areas.

### **Technical Advice Note 18: Transport**

5.2.7. Technical Advice Note 18<sup>38</sup> provides advice on a variety of topics including accessibility, parking, development design, transport infrastructure, and assessing development impacts.

5.2.8. Paragraph 9.2 states that developers should be required to submit transport assessments (TAs) to accompany planning applications for developments that are likely to result in significant trip generation, with Annex D detailing the suggested thresholds.

5.2.9. Paragraph 9.13 states that in order to determine the necessity and effectiveness of the travel plan, it is preferable that a TA is undertaken, and the travel plan is developed as a component of the transport implementation strategy.

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<sup>37</sup> Welsh Government (2024). Planning Policy Wales, Edition 12, February 2024. [Online] Available at: [www.gov.wales/planning-policy-wales](http://www.gov.wales/planning-policy-wales) [Accessed 28 October 2025].

<sup>38</sup> Welsh Assembly Government (2007). Technical Advice Note 18: Transport. [Online] Available at: [www.gov.wales/technical-advice-notes](http://www.gov.wales/technical-advice-notes) [Accessed 28 October 2025].

<sup>39</sup> Welsh Government (2021). Llwybr Newydd: The Wales Transport Strategy 2021. [Online] Available at: [www.gov.wales/llwybr-newydd-wales-transport-strategy-2021](http://www.gov.wales/llwybr-newydd-wales-transport-strategy-2021) [Accessed 28 October 2025].

<sup>40</sup> Welsh Government (2021). Future Wales: The National Plan 2040. [Online] Available at: [www.gov.wales/future-wales-national-plan-2040](http://www.gov.wales/future-wales-national-plan-2040) [Accessed 28 October 2025].

<sup>41</sup> Planning (Wales) Act 2015. [Online] Available at: <https://www.legislation.gov.uk/anaw/2015/4/contents> [Accessed 28 October 2025].

<sup>42</sup> Well-being of Future Generations (Wales) Act 2015. [Online] Available at: <https://www.legislation.gov.uk/anaw/2015/2/contents> [Accessed 28 October 2025].



- 5.2.10. Notwithstanding the above, PCC has confirmed that a TA and travel plan are not required to support the proposed development in addition to this EIA. This consultation response is detailed in Table 5.1.

***Wales Transport Strategy 2021***

- 5.2.11. The Wales Transport Strategy<sup>39</sup> outlines the 20-year plan for the region's transport system. It details the immediate priorities and long-term goals for the region, with nine mini-plans for various transport modes and sectors. It is underpinned by comprehensive reports and an appraisal to guide collaborative efforts among governments, local authorities, and transport providers to align transport with the well-being of current and future generations in Wales.

- 5.2.12. There are three key priorities detailed in the Wales Transport Strategy:

- bring services to people in order to reduce the need to travel;
- allow people and goods to move easily from door to door by accessible, sustainable and efficient transport services and infrastructure; and
- encourage people to make the change to more sustainable transport.

- 5.2.13. Transport for Wales has developed a five-year National Transport Delivery Plan 2022 to 2027<sup>43</sup> that sets out the specific transport interventions that align with the priorities and ambitions set out in the Wales Transport Strategy.

- 5.2.14. Annex 2 of the National Transport Delivery Plan details the full list of programmes and interventions specified in the plan, including timelines for delivery. However, there are no interventions proposed in the vicinity of the application site.

***Future Wales: The National Plan 2040***

- 5.2.15. Future Wales<sup>40</sup>, prepared by the Welsh Government, is the National Development Framework for Wales, setting out the direction for development up to 2040. It sets out the strategic approach for addressing the key priorities within the planning framework, and guides investment in infrastructure and development to benefit the region.

- 5.2.16. Policy 12: Regional Connectivity states that the Welsh Government is committed to enhancing regional connectivity, with a focus on sustainable transport options. In urban areas, the emphasis is on integrating active travel with public transport to support growth, whereas in rural areas, the priority is to encourage the use of ultra-low emission vehicles and maintain diverse local bus services. In partnership with Transport for Wales and other stakeholders, the government plans to implement active travel networks, reform the legislative framework for buses, develop regional metro systems, and facilitate the adoption of ultra-low emission vehicles. Planning authorities are directed to align growth with public transport investments, promote active travel in new developments, reduce urban car parking, and ensure new non-residential developments include electric vehicle charging points.

**Local Policy**

- 5.2.17. PCC is the local highway authority for all local roads (non-trunk roads) within its administrative area. The following local planning policy documents have been reviewed and considered as part of this assessment:

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<sup>43</sup> Welsh Government (2023). National Transport Delivery Plan 2022 to 2027. [Online] Available at: <https://www.gov.wales/national-transport-delivery-plan-2022-2027> [Accessed 28 October 2025].



- Local Development Plan<sup>44</sup> (LDP); and
- Local Transport Plan<sup>45</sup> (LTP).

#### ***Local Development Plan***

5.2.18. For PCC, the current LDP (LDP 1) was adopted in 2013 and remains current until LDP 2 (the replacement plan) is adopted. The plan establishes a vision-based development strategy and policies to guide the development and use of land in Pembrokeshire. In terms of transport, the LDP notes the increased constraints when developing rural communities which have the potential to increase the need to travel. It is noted that this can be countered by providing employment within these rural communities. The following policies have been identified as being relevant to this development:

- Strategic Policy SP 10 states that improvements to the existing transport infrastructure will increase accessibility to employment, services and facilities, particularly by sustainable means, will be approved.
- General Policy GN.1 states that development would be permitted where it takes place in an accessible location, would incorporate sustainable transport and accessibility principles, and would not result in a detrimental impact on highway safety or in traffic exceeding the capacity of the highway network.

5.2.19. This chapter makes reference to the current LDP and the planning statement for the proposed development considers emerging policies and therefore considers the LDP Review which is currently being developed.

#### ***Local Transport Plan***

5.2.20. PCC and the three neighbouring authorities of Carmarthenshire County Council, City and County of Swansea, and Neath Port Talbot County Borough Council have worked collaboratively to create the Joint LTP for South West Wales which provides the framework for improving connectivity to, from and within the region for the period 2015 – 2020. At the time of writing, The Draft Regional Transport Plan 2025 – 2030 has been approved but not yet published. It is assumed the 2015 – 2020 LTP is still in effect until the new LTP/RTP has been published.

5.2.21. The vision of the LTP is to improve transport and access and facilitate economic development and the use of more sustainable modes of travel. Long-term aims include the use of accessibility planning to ensure that development is put in the right place; and to encourage more sustainable freight distribution through better use of rail, intermodal facilities and ports.

### **5.3. Methodology**

5.3.1. The following section describes the methodology used to determine the likely significant effects on Transport and Access as a result of the proposed development.

#### **Application Site**

5.3.2. The application site is located within a rural area on St Davids Peninsula in Pembrokeshire, South Wales. As such, the highway network of interest is administered by PCC as the local

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<sup>44</sup> Pembrokeshire County Council (2013). Local Development Plan: Planning Pembrokeshire's Future. [Online] Available at: [www.pembrokeshire.gov.uk/local-development-plan](http://www.pembrokeshire.gov.uk/local-development-plan) [Accessed 28 October 2025].

<sup>45</sup> Pembrokeshire County Council (2023). Transport Strategy. [Online] Available at: <https://www.pembrokeshire.gov.uk/transport-strategy> [Accessed 28 October 2025].



highway authority. The application site is situated approximately 1.2 km north-east of the coastline and to the north of the A487 between Haverfordwest and St Davids.

- 5.3.3. The current primary vehicular access to Cawdor Barracks is via the main gate from the unclassified road (U3017). The U3017 forms the minor arm of a ghost island priority junction with the A487 located to the south of the southern boundary of Cawdor Barracks.
- 5.3.4. Crash gates located on the perimeter of the application site provide direct access onto the airfield road network for emergency services vehicles. These provide connections to the C3010 to the east of application site and connects as the minor arm to the A487 to the south-east.
- 5.3.5. Chapter 3 (Proposed Development) details the full extent of works involved in constructing the Proposed Development. For security reasons construction access for the proposed development cannot utilise the existing Cawdor Barracks access and therefore it is proposed that a temporary construction access will be formed on the west side of the C3010. Figure 3.2 shows the location of this access, approximately 0.9 km and north of the junction with the A487 at Penycwm. It is proposed that the purpose-built, temporary construction access will remain as a crash gate to provide emergency access/egress once construction is complete.
- 5.3.6. A new permanent operational access for the application site will be created at existing crash gate 21 via an entry control point building, also located on the west side of the C3010, approximately 1.3 km north of the junction with the A487 at Penycwm.

### Study Area

- 5.3.7. The study area for the assessment was agreed during the EIA scoping process, and includes the following links and junctions:
- A487 (between U3017 and Newgale);
  - A487/C3010 junction;
  - C3010 (Penycwm to Rhydygele);
  - A487/U3017 junction; and
  - U3017 (between its junction with A487 to Brawdy Airfield).
- 5.3.8. A plan showing the highway network of interest and the extents of the study area is shown on Figure 5.1.
- 5.3.9. The location of the application site and key environmental constraints can be found in Figure 3.3 (General Constraints Plan).

### Methodology

- 5.3.10. Baseline data used within this assessment has been compiled using the following methods and data sources:
- desktop studies reviewing readily available or published information;
  - site based traffic surveys; and
  - consultation with appropriate organisations through scoping responses (detailed in Appendix 2.1) and consultation detailed in Table 5.1.

### Guidance

- 5.3.11. The environmental impacts of the traffic generated by the proposed development have been assessed with reference to the EATM<sup>35</sup>. It is noted that the EIA Scoping Report pre-dated the

publication of the EATM and instead referenced the Guidelines for the Environmental Assessment of Road Traffic<sup>46</sup>, which have now been superseded by the EATM. This guidance is from the same source, the Institute of Environmental Management and Assessment (formerly the Institute of Environmental Assessment) and is the generally accepted main guidance for traffic and transport matters relating to environmental impact assessments.

5.3.12. Reference has also been made to guidance given by DMRB as required.

### Consultation

5.3.13. An EIA Scoping Report was submitted to PCC in March 2023. An EIA Scoping Opinion was received in response to the EIA Scoping Report (May 2023). The applicant's responses to the EIA Scoping Opinion are contained in Appendix 2.1 (DARC EIA Scoping Opinion Response Table).

5.3.14. It was initially proposed to scope out the operational phase assessment in the EIA Scoping Report, however, based on Scoping Opinion, particularly from PCC, this has subsequently been scoped back into the assessment.

5.3.15. Table 5.1 summarises the consultation that has been undertaken since the receipt of the EIA Scoping Opinion.

Table 5.1: Summary of Consultation

Consultee	Date	Form of Consultation	Topics Discussed and Actions Agreed
			<p>Background Data</p> <ul style="list-style-type: none"> <li>The assessment should be based on new Automatic Traffic Counts (ATCs) and turning count data collected during the months of June and August to cover seasonality.</li> <li>Dates and locations agreed.</li> </ul> <p>Construction Access</p> <ul style="list-style-type: none"> <li>The principle of providing construction access from the unnamed road (C3010) was agreed. Exact location to be determined based on visibility requirements and ecological constraints.</li> <li>It was acknowledged that the junction of the C3010 and A487 is suitable in respect of geometry and visibility.</li> <li>Appropriate visibility at the new access should be provided based on speed survey results.</li> <li>The needs of pedestrians and cyclists on the C3010 should be considered in the assessment, with a suggestion to provide short sections of informal footway in the verge.</li> </ul> <p>Construction Traffic</p> <ul style="list-style-type: none"> <li>It was confirmed that there are no embargos on movement of general construction traffic.</li> <li>Be mindful of traffic congestion in Haverfordwest during peak hours and school times.</li> <li>Be mindful of occasional closure of A487 Newgale and lengthy diversion for heavy goods vehicles (HGVs).</li> </ul>
PCC – Highways Development	17/05/2023	Email	

<sup>46</sup> Institute of Environmental Assessment (1993). Guidelines for the Environmental Assessment of Road Traffic.

Consultee	Date	Form of Consultation	Topics Discussed and Actions Agreed
			<ul style="list-style-type: none"> <li>The assessment should set out the proposed routes for construction traffic although a routing agreement is not necessary.</li> </ul> <p>Assessment of Operational Effects</p> <ul style="list-style-type: none"> <li>Operational effects need to be scoped into the assessment so that the authority can fully understand the impacts of cross over between traffic from the existing barracks and the proposed development.</li> <li>Acknowledge that there was no need to undertake capacity testing/operational analyses of junctions and there was no requirement to prepare a separate Transport Assessment or Transport Statement to support the planning application.</li> </ul>

### Assessment Criteria

5.3.16. The potential for significant environmental effects from the traffic generated by the proposed development have been assessed with reference to EATM<sup>35</sup> and by using professional judgement as appropriate, and as set out in the following paragraphs.

5.3.17. The assessment of construction traffic has been undertaken against observed background conditions and a set of baseline scenarios agreed with PCC.

### **Screening Assessment**

5.3.18. It is generally accepted industry practice that, as a starting point, a 30% change in daily traffic flow represents a reasonable threshold for including a highway link within an environmental assessment. Where there are major changes in the composition of the traffic flow, e.g. a much greater flow of HGVs, a lower threshold may be appropriate. The guidance considers that projected changes in total traffic flow of less than 10% create no discernible environmental effect.

5.3.19. The EATM guidance recommends two rules to be considered when determining whether the impact of traffic should be assessed on a road link:

- Rule 1: Include highway links where traffic flows will increase by more than 30% (or the number of HGVs will increase by more than 30%); and
- Rule 2: Include highway links of high sensitivity where traffic flows have increased by 10% or more.

5.3.20. Where the thresholds are exceeded, the potential impacts in terms of severance; driver delay; pedestrian delay (incorporating delay to all non-motorised users); non-motorised user amenity, fear and intimidation; and road safety, are all considered (i.e. the level of change).

### **Consideration of Receptors and Sensitivity**

5.3.21. The determination of the sensitivity of receptors to environmental effects has been based on best practice and DMRB guidance. In terms of transport impacts, receptors comprise people living, using facilities and transport networks in the area. Where appropriate, sensitivity to changes in transport conditions considers vulnerable user groups, which includes school children and the elderly.

5.3.22. The key potential receptors that are sensitive to the potential impact of a traffic increase are identified as follows:



- people at home;
- people in work;
- locations with concentrations of vulnerable users (e.g. hospitals, places of worship and schools);
- retail areas;
- recreational areas;
- tourist attractions;
- collision clusters and routes with road safety concerns; and
- junctions and highway links at (or over) capacity.

5.3.23. Table 5.2 summaries the general criteria that was presented in the EIA Scoping Report<sup>47</sup> for identifying receptor sensitivity by relating the presence of vulnerable groups to identifiable physical features within the environment.

Table 5.2: Sensitivity Definitions

Sensitivity	Definition
Very High	Those receptors with high sensitivity with site-specific reasons for being particularly sensitive to changes in traffic flows (e.g. community with high incidence of mobility impairment requiring to cross roads to access essential facilities).
High	Receptors of high sensitivity to traffic flows (e.g. schools, colleges, playgrounds, accident black spots (with reference to accident data), retirement homes, urban/residential roads without footways that are used by pedestrians)
Medium	Traffic flow sensitive receptors (e.g. congested junctions, doctors' surgeries, hospitals, shopping areas with roadside frontage, roads with narrow footways, unsegregated cycleways, community centres, parks, recreational facilities)
Low	Receptors with some sensitivity to traffic flow (e.g. places of worship, public open space, nature conservation areas, listed buildings, tourist attractions and residential areas with adequate footway provision)
Negligible	Receptors with low sensitivity to traffic flows and those sufficiently distant from affected roads and junctions.

### **Magnitude of Impact**

5.3.24. EATM guidance expresses a need for interpretation and judgement on the part of the traffic and movement expert to determine the magnitude of impacts for each identified issue. Magnitude has been assessed and quantified as either 'no change', 'negligible', 'minor', 'moderate' or 'major' using the methodology set out in the EATM guidelines as summarised below.

5.3.25. With particular relevance to severance, it is suggested that thresholds of changes in traffic of 30%, 60% and 90% could produce a 'slight' ('minor'), 'moderate' and 'substantial' ('major') change respectively. However, strict adherence to percentage changes is cautioned

<sup>47</sup> MOD (2023). EIA Scoping Report, Project DARC – Cawdor Barracks. Document reference: 65208061-SWE-XX-XX-T-J-0002-CawdorScopingReport, Revision P02

throughout, given very low baseline flows are disproportionately impacted and increases from a low baseline do not often result in any perceivable effect.

- 5.3.26. The magnitude of impacts on driver delays is typically based on the results of a TA to understand the true potential environmental effects. However, in this instance, it was agreed with PCC during the scoping process that a TA was not required, as the predicted changes in traffic flows were below the relevant thresholds for detailed assessment. It is, however, stated in the EATM guidance that “these delays are only likely to be significant when the traffic on the network surrounding the development is already at, or close to, the capacity of the system”. In the absence of a TA, professional judgement has been applied to assess the potential impacts on driver delay.
- 5.3.27. It is noted that when assessing pedestrian delay, given the range of influencing factors, it may not be appropriate to use defined thresholds, but it is recommended that a competent traffic and movement expert use their judgement to determine the magnitude of changes on pedestrian delay.
- 5.3.28. With regard to assessing the significance of effects on pedestrian amenity, combined with pedestrian fear and intimidation, a useful threshold is when the traffic flow is halved or doubled. Further comparative tables, Table 3.1 to Table 3.3 in Chapter 3 of the EATM, are provided for the evaluation of magnitude on fear and intimidation.

**Assessment of Significance**

- 5.3.29. Transport related environmental effects have been assessed in terms of their duration, frequency and reversibility. Using professional judgement, these have been considered in identifying the overall significance of the transport related environmental effects of the proposed development.
- 5.3.30. The significance of effects has been evaluated, taking into consideration the likely changes to baseline conditions. The significance levels have been informed by the sensitivity of receptors and magnitude of impacts and the significance matrix set out in Table 5.3.

Table 5.3: Significance of Effect

		Magnitude of Impact				
		No change	Negligible	Minor	Moderate	Major
Sensitivity	Very High	Neutral	Slight	<b>Moderate or large</b>	<b>Large or very large</b>	<b>Very large</b>
	High	Neutral	Slight	<b>Slight or moderate</b>	<b>Moderate or high</b>	<b>Large or very large</b>
	Medium	Neutral	Neutral or slight	Slight	<b>Moderate</b>	<b>Moderate or large</b>
	Low	Neutral	Neutral or slight	Neutral or slight	Slight	<b>Slight or moderate</b>
	Negligible	Neutral	Neutral	Neutral or slight	Neutral or slight	Slight

- 5.3.31. For the purpose of the assessment, those effects identified as being of ‘moderate’ or greater significance are regarded as being significant (shown in bold in Table 5.3). Effects of ‘slight’ or lesser significance are identified but are not considered significant. Effects are either adverse, neutral or beneficial.



### Assumptions and Limitations

- 5.3.32. This assessment has been based on traffic flow data collected during two distinct time periods as agreed with PCC (as described in Table 5.1). The baseline traffic has been expanded to future years using a growth factor obtained from Trip End Model Presentation Program (TEMPro) software, as per standard industry practice. However, future year baseline traffic flows are therefore an estimate only for assessment purposes.
- 5.3.33. The construction phase and operational phase assessments have been based on the proposed development description presented in Chapter 3 (Proposed Development) to establish a realistic worst-case assessment scenario.

## **5.4. Baseline Conditions**

### The Highway Network of Interest

#### ***A487***

- 5.4.1. The A487 is a single carriageway road which varies in width but is typically 6 m wide along the section within the study area. As it is generally a rural area, the speed limit is 60 mph between St Davids and Haverfordwest, with a reduction in the speed limit to 40 mph through Penycwm and Roch Gate, and between Nine Wells and Solva. The speed limit drops to 30 mph through Newgale and 20 mph through Solva. There are only footways and lighting along some sections through villages along the route.
- 5.4.2. The A487 to the east of the site has a constrained section where it is not possible for a car and a large vehicle to pass unhindered. This is located at Newgale where an informal shuttle working arrangement is in operation at a bridge crossing over Brandy Brook adjacent to the beach.
- 5.4.3. In recent years, the section of the A487 to the east at Newgale has become unpassable on several occasions due to tidal flooding. These flooding events have occurred in both winter and summer months, and PCC expects this to become a more frequent and severe event with predicted rising sea levels in the future.
- 5.4.4. Currently, the A487 is sheltered by a shingle bank at the coastal edge but it is anticipated to be eroded within 10 to 20 years. The Newgale bypass is a proposed new stretch of road to be built inland to provide the primary route of the A487 between Penycwm and Roch Gate. The new road will effectively bypass Newgale beach. The 2.5 km stretch would link the existing road at Penycwm with a new roundabout near Roch. The A487 Newgale Bypass is a separate initiative being promoted by PCC and is entirely independent of the proposed development at Cawdor Barracks.
- 5.4.5. The Newgale Coastal Adaptation Project is still in the pre-application phase at the time of writing. As such, the proposed Newgale Coastal Adaptation Project does not form part of the future highway network that has been considered within this assessment.

#### ***A487/C3010 Junction***

- 5.4.6. The junction of the C3010 with the A487 is a simple priority junction. Immediately to the west of the junction there is an uncontrolled pedestrian crossing with central refuge on the A487. Beyond the crossing, on the eastbound side of the A487 there is a layby for the properties adjacent to the junction. On the westbound side of the A487 there is a bus stop layby. Immediately to the east of junction there is another priority-controlled junction for Erw Lon unclassified road. There is tactile paving at each junction demarking the crossing point for pedestrians, however there is no raised footway between the junctions with only a solid white line demarking the footway from the carriageway. Bollards are present at the crossing points.



### ***Unnamed Road (C3010)***

5.4.7. The unnamed C3010 is a classified road which connects the A487 with unclassified rural roads to the north and east of the application site. The temporary construction access and permanent operational access for the proposed development would be located on the C3010, approximately 0.9 km and 1.3 km respectfully, north of the junction of the C3010 with the A487 at Penycwm, as shown in the plans included within Appendix 5.2. The operational access will be created at the location of an existing crash gate and access track into the DARC site (crash gate 21) while a new access from the C3010 will be created for the construction access. It is proposed the temporary construction access will be left as a new crash gate for emergency access/egress.

5.4.8. It is a single carriageway road with a typical width of around 5.0 m, before narrowing to approximately 4.3 m at the point prior to where the road turns east away from the application site. The C3010 is subject to the national speed limit. Historically, it is understood that the C3010 was used as the access route for HGVs associated with a former quarry which was located approximately 1 km to the north of Penycwm.

### ***A487/Unnamed Road (U3017) Junction***

5.4.9. The primary vehicular access for Cawdor Barracks is from the unclassified road (U3017). The junction of the U3017 with the A487 is a typical ghost-island junction arrangement with the U3017 forming the minor arm.

5.4.10. The junction has approximately 3.2 m wide through lanes on the A487 and an approximately 3.5 m wide right turn lane that is around 40 m in length which enables up to six vehicles (based on a length of 6 m per vehicle), to wait in the right turn lane without blocking the main A487 westbound lane. The unnamed road (U3017) has a flared junction mouth that will allow two vehicles (left and right turning) to wait at the give way line.

### ***Unnamed Road (U3017)***

5.4.11. This unnamed road which connects the A487 to the primary vehicular access for Cawdor Barracks is a single carriageway road approximately 5.5 m wide. There is a narrow footway on the northern frontage throughout its length except for a short section prior to the junction with the A487. Street lighting is present for approximately 230 m starting from the security barrier at the site entrance.

### **Baseline Traffic Flow Data**

5.4.12. Turning count surveys covering the envisaged construction staff arrival and departure periods were undertaken at the following junctions (as located on Figure 5.2):

- JTC1: A487/U3017 (Cawdor Barracks); and
- JTC2: A487/C3010 (Penycwm);

5.4.13. The turning counts were undertaken on Tuesday 6 and Thursday 8 June 2023 and then repeated on Tuesday 29 and Thursday 31 August 2023. Survey hours were 06:30 to 09:30 and 16:00 to 19:00. All counts were classified by vehicle type and origin/destination.

5.4.14. In addition, a series of Automatic Traffic Count (ATC) surveys were undertaken for the following links (as located on Figure 5.2):

- ATC1: A487 Ordnance Survey grid reference (OSGR): SM 81320 24667;
- ATC2: U3017 OSGR: SM 84208 23923;
- ATC3: C3010 OSGR: SM 84977 23630; and

- ATC4: A487 OSGR: SM 85035 22720.

- 5.4.15. The ATC surveys were undertaken over two 7-day periods commencing on Tuesday 6 June and Saturday 26 August 2023, for the neutral month of June and peak summer periods respectively. The collected data includes traffic flow classified by vehicle type, per direction and vehicle speed. The traffic flow data have been used to establish baseline traffic flows for the highway network of interest within the study area, including the construction traffic route. The data are presented as Annual Average Daily Traffic (AADT) flows, which includes all vehicles, and HGVs, which is the daily total of heavy vehicles only.
- 5.4.16. Examination of the collected data shows that the A487 does not experience typical weekday AM and PM peak hours but rather builds to a consistent flow level from around 10:00 to 11:00 until around 17:00. Cawdor Barracks does experience a more typical peak hour operation profile with an inbound peak between 07:00 and 08:00 and an outbound peak between 17:00 and 18:00.
- 5.4.17. Given the security arrangements of Cawdor Barracks, it was not possible to undertake a video survey at the main gate. Therefore, in order to understand the traffic flows relating to the existing use, ATC2 was positioned on the U3017, to the east of the side road leading to Park Hall Holiday Village. The collected data have been used to understand the existing level of traffic accessing Cawdor Barracks. Further comparison with the turning count undertaken at the A487/U3017 junction has identified that typically 50% of the traffic passing through the junction originates/derives from Cawdor Barracks with the remaining traffic either using the road leading to Park Hall Holiday Village or being associated with Brawdy Business Park which is also accessed via the U3017.
- 5.4.18. Figure 5.2 shows the locations of the traffic count sites. Table 5.4 sets out the baseline traffic flows obtained from the ATC surveys and also shows the seasonal variation captured within the data over the course of the two survey periods.

Table 5.4: Summary of ATC Traffic Flow Data

Season	Site	AADT	HGV	%HGV
June 2023	ATC1	4,019	29	0.7%
	ATC2	478	5	1.0%
	ATC3	592	7	1.2%
	ATC4	4,955	89	1.8%
	ATC1	4,941	26	0.5%
	ATC2	353	1	0.3%
	ATC3	657	5	0.8%
August 2023	ATC4	5,783	127	2.2%

- 5.4.19. From Table 5.4, it can be seen that traffic volumes are higher in August 2023 when compared to the June 2023 flows on each highway, except for the U3017 (ATC2) which captured traffic associated with Cawdor Barracks. Therefore, it can be deduced that during the typical holiday season, the highway network experiences increased traffic flows, whilst traffic associated with Cawdor Barracks reduces.

- 5.4.20. Furthermore, it is noted that HGV traffic volumes reduce across the datasets in August with the exception of the A487 to the east of Penycwm (ATC4). Closer inspection of the data shows that the A487 experiences significantly more HGV traffic at ATC4 than at ATC1, and this is most likely due to the presence of Brawdy Business Park. ATC4 also shows a consistent increase in southbound HGV flows during August, throughout the 7-day count period. It is speculated that the apparent anomaly could be as a result of construction activities locally or increased activity from the business park.
- 5.4.21. The ATC surveys captured vehicle speeds as summarised in Table 5.5. The table presents the 85th percentile speed for each count site by direction.

Table 5.5: Summary of ATC Traffic Speed Data

Site	Direction	85th Percentile (%) June	85th Percentile (%) August
ATC1	Eastbound	49 mph	48 mph
	Westbound	52 mph	52 mph
ATC2	Eastbound	42 mph	40 mph
	Westbound	47 mph	46 mph
ATC3	Northbound	43 mph	44 mph
	Southbound	46 mph	46 mph
ATC4	Northbound	38 mph	35 mph
	Southbound	38 mph	35 mph

- 5.4.22. A review of the collected data shows that vehicle speeds are not seasonally variable. Also, although ATC2 was located within the 30 mph speed limit zone on the U3017, the recorded vehicle speeds are typically well above the prevailing speed limit. All other recorded traffic speeds are within the prevailing speed limits.

### Future Baseline

- 5.4.23. Details of the estimated traffic generation throughout the construction and operational phases of the proposed development are detailed within Section 5.6. As outlined below, the peak traffic generation is expected to occur during the construction phase, and specifically in 2027, when concrete foundation pours for the antenna are scheduled.
- 5.4.24. A growth factor has been identified using industry standard TEMPro software and applied to the baseline traffic flows to produce the future year baseline traffic flows. The identified growth factor is as follows:
- AADT growth – Pembrokeshire TEMPro area code 003 - 2023 to 2027 – all roads: 1.0908
- 5.4.25. The future year baseline traffic flows, expressed as two-way AADT, are detailed in Table 5.6.

Table 5.6: Summary of Future Traffic Flows

Season	Site	AADT	HGV
June 2027	ATC1	4,384	32
	ATC2	521	5

Season	Site	AADT	HGV
	ATC3	646	8
	ATC4	5,405	97
	ATC1	5,390	28
	ATC2	385	1
	ATC3	717	5
August 2027	ATC4	6,308	139

### Site Visit

- 5.4.26. A site visit was undertaken in July 2023 to observe and identify background highway conditions, traffic operation and review active travel and public transport infrastructure.

### Road Safety Review

- 5.4.27. A review of the most recent five-years (2020 to 2024 inclusive) personal injury collision record for the highway network of interest has been undertaken using Collision Plot data. This review determined the number of reported collisions and their respective locations across the network, as shown on Image 5.1.

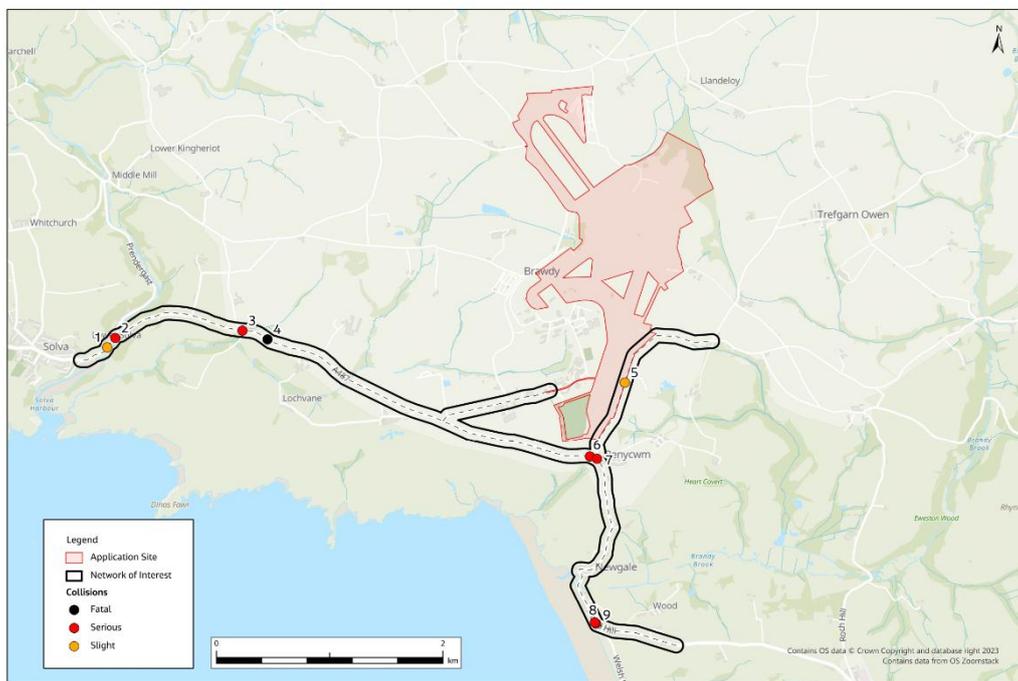


Image 5.1: Collisions on the Highway Network of Interest

- 5.4.28. A review of the data reveals there are no clusters of collisions, defined as four collisions within a 50-metre radius of each other within five years, in the vicinity of the application site. There was a total of nine collisions along the highway network of interest. There was no apparent pattern to the location of these incidents.
- 5.4.29. A summary of these collisions is given in Table 5.7 to Table 5.9.



Table 5.7: Collisions by Severity

Severity	Number	Percentage
Fatal	1	11%
Serious	6	67%
Slight	2	22%
Total	9	100%

Table 5.8: Vehicle Types Involved in All Collisions

Vehicle Type	Number	Percentage
Car	10	62%
Motorcycle	3	19%
LGVs	3	19%
HGVs	0	0%
Total	16	100%

Table 5.9: Casualties Involved in All Collisions

Severity	Number	Percentage
Fatal	1	6%
Serious	9	47%
Slight	9	47%
Total	19	100%

- 5.4.30. Two serious collisions occurred in Penycwm, both of which involved motorcycles (ref: 6 and 7 on Image 5.1). Another collision occurred on the C3010, close to the proposed temporary construction access (ref: 5 on Image 5.1) which reportedly involved a young driver, resulting in one slight injury.
- 5.4.31. One serious and one slight collision occurred just outside of Solva (ref: 1 and 2). The serious collision involved a car and a light goods vehicle. Another serious collision and a fatal collision occurred along the A487 between Solva and Penycwm (ref: 3 and 4). The former involved a collision of three cars and a light goods vehicle, whilst the latter involved a single car with a young driver that skidded and overturned off the carriageway.
- 5.4.32. A further two serious collisions (ref: 8 and 9 on Image 5.1) occurred along the A487 near Newgale. One collision involved a motorcycle and a light goods vehicle, whilst the other two involved four cars and one light goods vehicle.
- 5.4.33. Overall, the collisions which have been recorded over the five-year period are randomly distributed across the highway network of interest and are typical of the type of incidents which occur on rural roads. Furthermore, the collisions do not suggest an inherent road safety

concern with the highway network of interest that would be exacerbated by an increase in traffic generated by the proposed development.

### Public Transport Network

- 5.4.34. Public transport is primarily administered and promoted by Traveline Cymru, operated by Transport for Wales. The Traveline Cymru website shows that the application site is served by the bus route T11 (TrawsCymru Connect) operated by Richard Bros. The service provides an hourly service between Fishguard, St Davids and Haverfordwest between 07:00 to 17:00, Monday to Friday, with a slightly reduced frequency of service on Saturday.
- 5.4.35. The closest bus stops to the application site are provided on the A487, near to its junction with the U3010, approximately 0.9 km walking distance from the temporary construction access and 1.3 km walking distance from the operational access. The timetable is included in Appendix 5.1 for reference.
- 5.4.36. The closest bus stops to the existing Cawdor Barracks are also on the A487, adjacent to its junction with the U3017, approximately 1 km walking distance from the main gate of the barracks.
- 5.4.37. As such, the bus service is unlikely to be suitable for use by construction workers but may be suitable for use by some operational staff subject to their hours of work, albeit that the walking distance exceeds recommended thresholds.
- 5.4.38. The nearest railway station is located in Haverfordwest which is over 11 miles from the application site. The station is reachable within a 50-minute journey via the T11 bus service. However, the additional journey time means that it is unlikely that the train will be utilised by people accessing the application site.
- 5.4.39. Professional judgement has determined that there will be a negligible effect on current public transport services and the public's ability to access it. Therefore, it is deemed that there is no need to take the assessment of the public transport network any further.

### Walking and Cycling Infrastructure

- 5.4.40. A footway is provided on the northern frontage of the U3017 between its junction with the A487 and the access to the existing Cawdor Barracks that the current regiment will continue to use until they leave in circa 2028. The footway is narrow in places, and it terminates prior to the junction of the U3017/A487. However, there is some evidence that pedestrians may continue across the grassed area surrounding the bell mouth, presumably in order to access the bus stop on the southern frontage of the A487. Although the junction forms a wide bell mouth and comprises a ghost island right turn lane, no pedestrian refuge islands are provided on any arms.
- 5.4.41. There is no pedestrian infrastructure on the C3010 between the A487 junction and the proposed temporary construction access and permanent operational access for the proposed development. The pedestrian infrastructure along the A487 terminates prior to the junction. The C3010 has grass verges on either side of the carriageway, but there is no formal infrastructure in place and little evidence to suggest that it is currently used frequently by pedestrians.
- 5.4.42. There are short sections of footway provided at each of the bus stops provided on the A487 within Penycwm along with a pedestrian refuge to assist pedestrians crossing the main carriageway.
- 5.4.43. The National Cycle Route (NCN) 4 runs along the A487 from the east, and the U3017 adjacent to Cawdor Barracks, before turning off the U3017 passing Park Hall Holiday Village and continuing westbound to Middle Hill. It is part of a long-distance route between London and Fishguard via Reading, Bath, Bristol, Newport, Swansea, Tenby, Haverfordwest and St.

Davids. The section of the route from the A487 along the U3017 and around the perimeter of the application site (dashed section) appears to be an unofficial section of the route. The NCN4 route and Public Rights of Way (PROW) within the vicinity of the application site are shown in Image 5.2 below. There is no designated active travel infrastructure along the C3010.

- 5.4.44. It is noted that there is an existing designated PROW (PP5/29/1) currently within the application site, however this is not currently accessible to the public. It is not definitively known at present how long this has been inaccessible, but it is likely that access was removed when it first became an RAF base in 1944. It is proposed to formally remove this PROW within the planning application for the proposed development, however the effect of this will be assumed to be negligible since it is historically inaccessible.

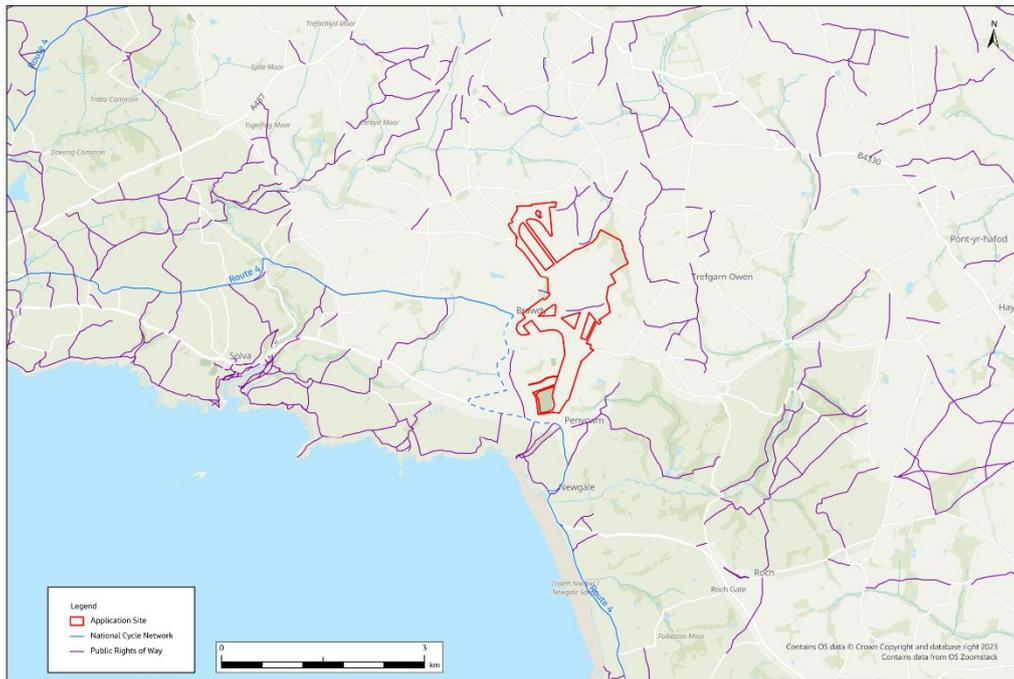


Image 5.2: National Cycle Route 4 and PROW.

- 5.4.45. A locally designated cycle route known as the Dewisland Trail runs to the north of the application site via Llandeloy. The long-distance circuitual trail explores the north-west coastal area of Pembrokeshire between St Davids and Goodwick. It is noted that the trail is most suited to leisure cycling rather than commuting.
- 5.4.46. Given the limitations of automatic traffic counters, it is not possible to classify the difference between cycles and motorcycles. Table 5.10 presents the total number of cyclists/motorcycles observed within the ATC data. In addition, the collected turning count data have been reviewed and show that the ratio of motorcycles to cycles during the peak hours is approximately 50:50. An estimated level of cycles has been factored from the ATC data.

Table 5.10: Summary of Cycle Trips

Season	Site	Cycles/Motorcycles	Estimated Cycles (50%)
	ATC1	50	25
	ATC2	6	3
June 2023	ATC3	16	8



Season	Site	Cycles/Motorcycles	Estimated Cycles (50%)
	ATC4	58	29
	ATC1	45	23
	ATC2	3	2
	ATC3	10	5
August 2023	ATC4	54	27

- 5.4.47. Table 5.10 highlights that the daily flows for cycles on both the C3010 and the U3017 are very low.

### Sensitive Receptors

- 5.4.48. The highway network of interest has been reviewed to identify receptors which could be considered as sensitive, as defined in Paragraph 5.3.22. The review is based on observations taken during the site visit and as part of the baseline review (Section 5.4), specifically for road safety.
- 5.4.49. Both the C3010 and the U3017 are typical of minor rural roads, with little or no pedestrian infrastructure and no street lighting. The C3010 has no notable frontage development and is not heavily trafficked. The U3017 does provide access for the Brawdy Business Park and the barracks and also shows use of the verges by pedestrians, however pedestrian activity is anecdotally very low. In conclusion, both roads are considered to be of low sensitivity, as defined in Table 5.2, and are therefore not sufficiently sensitive to trigger Rule 2 of the EATM guidance.
- 5.4.50. The A487 is also typically rural in nature with no pedestrian infrastructure outside the residential areas. These areas also have minimal pedestrian activity to note. Within the village of Penycwm, the speed limit changes to 40 mph and the road features bus stops, a pedestrian refuge island, footways and street lighting, suggesting increased levels of pedestrians and potential for vulnerable road users. However, the level of frontage development within Penycwm remains very low. The reduced speed limit and available off-carriageway infrastructure provides a level of protection for vulnerable road users which is typical of an A-class rural road. The road is therefore considered to be of low sensitivity, as defined in Table 5.2, and is therefore not sensitive when considering Rule 2 of the EATM guidance.

## 5.5. Design Interventions and Controls

### Design Interventions

- 5.5.1. The design of the proposed development has been an iterative process. The environment team has worked in close collaboration with the design team to avoid or reduce environmental impacts through the proposed development design. These are referred to as design interventions. This approach follows EIA best practice and principles set out in the mitigation hierarchy; the first principle being to avoid potential adverse effects, where feasible, before seeking to minimise or mitigate for impacts. Compensation for effects (for example off-site enhancement and/or remediation of effects) are considered if it is not reasonably possible to avoid or reduce adverse effects.
- 5.5.2. Chapter 3 (Proposed Development) details the development background and proposed design elements in more detail, including construction and operation characteristics relevant to this Transport and Access chapter.
- 5.5.3. Chapter 4 (Alternatives and Design Evolution) details the design alternatives that have been considered, including the environmental factors which have influenced the decision-making.

### ***Access Strategy***

- 5.5.4. During the construction phase, it is proposed that construction traffic will enter and exit the application site via a new access off the C3010 to minimise impacts on the existing site's operation and security. The designated routeing for HGV traffic, shown in Figure 5.1 and to be incorporated into the Construction Traffic Management Plan (CTMP), will avoid minor roads and minimise impacts at junctions as much as possible. The temporary construction access would be located approximately 0.9 km north of the junction of the C3010 with the A487 at Penycwm, as shown in the plans included within Appendix 5.2.
- 5.5.5. The operational access for staff vehicles and operational vehicles will be via an entry control point building from the C3010, located approximately 1.3 km north of the junction of the C3010 with the A487.
- 5.5.6. The location of the construction and operational access junctions were informed by a review of ecological constraints and highway characteristics of the C3010. Paragraph 3.6.15 of Chapter 3 (Proposed Development) acknowledges that this location was chosen for construction access as the C3010 from this location to the A487 is wide enough for two HGVs to pass each other and the road at this section is relatively straight which reduces safety risks. The location of the access into site off the C3010 is presented in Figure 3.2 and further detailed in Chapter 3 (Proposed Development).
- 5.5.7. It is proposed that the purpose-built, temporary construction access will be left a crash gate for emergency access/egress once construction is complete. Proposed landscaping and biodiversity mitigation would be introduced as per Figure 3.4. The principle of providing temporary construction access from the C3010 was originally agreed with PCC, during discussions held in May 2023 as part of the EIA scoping process, and further details agreed in February 2025, following the circulation of the proposed final access layout for the proposed development and associated passing places.
- 5.5.8. The ATC3 survey confirmed that the prevailing 85th percentile speeds on the C3010 are similar during both the June and August periods, at around 44 mph northbound and 46 mph southbound. The access design therefore incorporates visibility splays of 2.4 m x 160 m (suitable for traffic speeds of 50 mph) in both directions as specified in DMRB CD 109<sup>48</sup> (Drawing Number: 65208061\_SW\_XX\_XX\_D\_T\_002f in Appendix 5.2). A temporary speed reduction along this section of the C3010 could be implemented by a Temporary Traffic Regulation Order (TTRO) after further consideration and discussion with PCC if deemed sufficiently beneficial to traffic and/or non-motorised users.
- 5.5.9. It was also agreed with PCC that the temporary construction access will have a bound surface over at least the first 20 m set back from the highway.
- 5.5.10. PCC confirmed that a Section 184 agreement under the UK Highways Act 1980 for minor works will be sufficient to cover the design and implementation of the required works and the subsequent reinstatement of the verges.
- 5.5.11. Access to the existing Cawdor Barracks will remain through the existing access on the C3017. There will be no interaction between this access and the construction and operational traffic related to the new DARC site development.

### ***Abnormal Loads***

- 5.5.12. Some of the deliveries to the application site during the construction phase will constitute abnormal load deliveries, due to their overall dimensions of imported loads and components.

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<sup>48</sup> Highways England (2020). Design Manual for Roads and Bridges, CD 109 Highway link design. [Online] Available at: <https://www.standardsforhighways.co.uk/search/c27c55b7-2dfc-4597-923a-4d1b4bd6c9fa> [Accessed 28 October 2025].

A route to the site from the port of origin will be agreed with the relevant authorities prior to delivery of the loads concerned. The abnormal loads are expected to utilise the same temporary access as the general construction traffic.

- 5.5.13. The routeing will be informed by the Abnormal Loads Route Assessment prepared by Jacobs. As specific Abnormal Load origins are currently unknown it has been agreed to assess the following routes:
- M5 and M4 from the North or M4 from the South and East;
  - A48;
  - A40; and
  - Most appropriate route from A40 to the site access.
- 5.5.14. This provides an understanding of the key route and identifies pinch points such as low structures, weak structures or narrow carriageways which may prohibit movement. Engagement with PCC has also been undertaken to discuss any areas of concern.
- 5.5.15. Swept path analysis will be undertaken at critical points identified as a potential constraint to understand any mitigation which may be required.
- 5.5.16. The Abnormal Loads Route Assessment (ALRA) is included as Appendix 5.3.

### Controls

- 5.5.17. Controls are included in the Environmental Management Measures Table contained within Appendix 3.1 (Framework Construction Environmental Management Plan (CEMP)). The Framework CEMP has been produced in support of the planning application to present the controls and mitigation identified in this assessment. The Framework CEMP will be developed into the Detailed CEMP for implementation during construction and is secured by an appropriately worded planning condition. Further information on the Framework CEMP is provided in Chapter 3 (Proposed Development).

### ***Construction Traffic Management Plan***

- 5.5.18. The need for the proposed development to be supported by a Construction Traffic Management Plan (CTMP) was identified during EIA scoping discussions. The CTMP should consider the operation and management of all construction traffic to ensure the safe and efficient transportation of materials to the application site during the construction phase.
- 5.5.19. It is not possible to provide a finalised CTMP to support the proposed development at this stage. A CTMP would be produced pre-construction once the location of source materials is identified, expected to be from the east, and the Principal Contractor is appointed. The following outlines the key elements that will be covered by the final CTMP.
- 5.5.20. The CTMP would provide updated information on the construction schedule, key construction activities, and expected traffic volumes as details emerge. Primarily this would include the confirmed locations of source materials such as local quarries and expected key milestones.
- 5.5.21. Consideration has been given to the potential benefits of providing specified routes for construction traffic. Specifically, it is necessary to ensure that all HGVs are routed to avoid roads which are considered unsuitable. Furthermore, assessment has shown that access for HGVs into the C3010 from the western arm of the A487 is difficult and requires the full extent of the junction bell mouth, hindering two-way operation.
- 5.5.22. A HGV routeing strategy has therefore been identified which requires all HGVs to arrive at the application site from the south-east via the A487 and turn right directly onto the C3010 at Penycwm. Similarly, departing HGVs will be required to turn left onto the A487. As noted in

Table 5.1 it has been agreed with PCC that a formal routing agreement for construction traffic is not necessary.

- 5.5.23. Information on the temporary signage strategy for the delivery route will be presented in the CTMP along with details of temporary advance warning signage at crossing points and at the temporary construction access junction. The CTMP will also set out a number of road safety measures and load netting to reduce the impact of mud, dirt and general material on the road.
- 5.5.24. Details of the number of personnel expected on site will be set out within the CTMP following confirmation with the appointed contractors. Details will include the staff parking arrangements and any strategies for promoting car sharing. All staff will be expected to park within the application site and clear of the adopted highway.
- 5.5.25. Traffic management measures may need to be implemented while mitigation works are undertaken on the public highway. If works require temporary road closures, suitable diversion routes will be agreed with the relevant local highway authority and information will be provided to the public and emergency services to minimise any safety risk and potential delay. However, at this stage, no road closures are anticipated.
- 5.5.26. The appointed Contractor will nominate a person to be responsible for the co-ordination of all elements of traffic and transport during the construction process (liaison officer). This person will liaise with the local community so that the community has a direct point of contact within the contractor organisation who they can contact for information purposes or to discuss matters pertaining to the traffic management.
- 5.5.27. All vehicles arriving on site will be expected to travel in a courteous and respectful manner. The public will be able to report cases of dangerous driving or routing infringements to the site operator by email or using 24-hour emergency contact details to be provided by the Principal Contractor.

## 5.6. Potential Significant Effects

- 5.6.1. This section describes the potential significant effects which might occur as a result of the estimated traffic generation associated with the construction and operational phases of the proposed development.

### Construction Effects

#### ***Development Proposals***

- 5.6.2. It is anticipated that there will be an approximate 21-month construction programme commencing in April 2027. A construction phasing programme is presented as Table 3.2 in Chapter 3 (Proposed Development), and a table summarising typical daily traffic flows is included in Appendix 5.4.
- 5.6.3. The typical working day shift will be 07:00 to 19:00 Monday to Saturday (excluding Bank Holidays), with no work on Sundays. Working hours will extend to 20:00 during summer months.
- 5.6.4. It is assumed that all construction traffic (excluding on-site staff who will arrive and depart before/after the working day) will arrive and depart the application site evenly distributed throughout the working day. HGV traffic will be required to access and depart the application site via the specified HGV route.

#### ***Estimated Traffic Generation – Construction Traffic***

- 5.6.5. The 21 Rx antennas and 6 Tx antennas will require concrete foundations, a type-1 stone subbase and possible thin blinding layer. The 27 foundations will each need to be poured

continuously over the course of a single day. Foundation pours are programmed between months 3 to 10 at a frequency of one foundation pour per week.

- 5.6.6. All new roads internal to the application site will be up to 6 m wide of compacted gravel construction with appropriate subbase dependent on ground conditions and possible geotextile fabric.
- 5.6.7. Other construction activities will include the formation of compounds, construction pads, ancillary building and aprons. In total, it is expected that import/export of the following volumes of key aggregates will be required:
- Import of up to 1,488 m<sup>3</sup> concrete (252 deliveries with assumed 6 m<sup>3</sup> per vehicle);
  - Import of up to 8,279 m<sup>3</sup> subbase (831 deliveries with assumed 10 m<sup>3</sup> per vehicle); and
  - Removal of up to 1,927 m<sup>3</sup> soil (218 exports with assumed 9 m<sup>3</sup> per vehicle).
- 5.6.8. All topsoil will be retained on site and other excavated material will be removed. The proposals assume that all material to be removed from the application site will be loaded onto vehicles that have arrived empty to site, and not aggregate delivery vehicles which have unloaded on site.
- 5.6.9. Appendix 5.4 also includes a robust assumption for additional light goods vehicle (LGV) trips assumed for contractors, maintenance, other material and equipment deliveries.
- 5.6.10. As can be seen from Table 3.2 in Chapter 3 (Proposed Development) and Appendix 5.4, construction traffic volumes will vary over the construction phase. However, peak traffic generation will occur on concrete foundation pour days for the antennas. When considering the agreed assessment months of June and August, the peak two-way traffic generation is as follows:
- 76 and 80 LGVs per day, respectively; and
  - 14 and 10 HGVs per day, respectively; or
  - 36 and 32 HGVs per day, respectively, during foundation pour days.
- 5.6.11. Overall, this equates to an average of one arrival and one departure per hour for heavy vehicles and four arrivals and four departures per hour for light vehicles during a typical day in the peak month of construction.
- 5.6.12. When considering the estimated 27 specific foundation pour days throughout months 3 to 10, the average number of heavy vehicles increases to two arrivals and two departures per hour on average.
- 5.6.13. Approximately 70 no. 40 foot (12.1 m) flat-rack transport containers are required to transport elements of the antenna, such as the risers or tower sections and hubs. It is expected that some of these loads will constitute abnormal load deliveries due to their overall dimensions. A separate study has been undertaken (Appendix 5.3) to ascertain the suitability of the route for all abnormal load vehicles, although no additional physical mitigation measures are anticipated. This route will be agreed with PCC in advance of the deliveries being made and appropriate notification made to the relevant authorities as per standard processes, at the appropriate time.
- Estimated Traffic Generation – Construction Staff Traffic***
- 5.6.14. It is assumed that all construction staff will travel to the application site daily at times outside of the network peak hours (i.e. arriving prior to 07:00 and departing after 19:00, Monday to Friday). The CTMP will include the staff parking arrangements and any strategies for

promoting car sharing. All staff will be expected to park within the application site and clear of the adopted highway.

- 5.6.15. At its peak, during the assessment month of August, staff traffic volume is calculated at 35 vehicles arriving in the AM and then departing in the PM. This is based on a peak staffing level of 100 employees, with 50% travelling by private car, with an average occupancy of two staff per vehicle (25 vehicles) and 50% traveling as gangs in minibuses, with an average occupancy of five staff per vehicle (10 vehicles). Additional staff trips are included as staff leaving and arriving throughout the day during breaks, for example.
- 5.6.16. Considering the assessment month of June, the staff traffic volume is 34 vehicles arriving in the AM and then departing in the PM based on a staffing level of 95 employees, comprising 24 cars and 10 minibuses. Additional staff trips during the working day are also included.
- 5.6.17. All staff vehicles will be parked within the application site.

**Traffic Impacts**

- 5.6.18. Table 5.11 and Table 5.12 show the daily traffic flows generated by the proposed development (on both foundation pour days and typical construction days) and the 2027 assessment flows at each count site on the highway network of interest. The percentage change columns represent the percentage increase from the future baseline as a result of the traffic generated by the proposed development.
- 5.6.19. Whilst construction HGV traffic has been applied to the network in accordance with the HGV routing strategy, construction LGVs and staff traffic are not constrained to a specific route. For simplicity and to ensure a robust assessment, this light-vehicle traffic has been fully applied to both count sites on the A487, even though traffic will either route east or west on the A487, but not both. No construction traffic is expected on the U3017 as the temporary construction access on the U3010 is being used to keep access to the existing Cawdor Barracks and proposed development separate.

Table 5.11: Assessment of Development Traffic (Foundation Pour Days)

Season	Site	Future Baseline		Development Flows (Pour Days)		Future Combined		Percentage Change	
		AADT	HGV	AADT	HGV	AADT	HGV	AADT	HGV
June	ATC1	4,384	32	76	0	4,460	32	2%	0%
	ATC2	521	5	0	0	521	5	0%	0%
	ATC3	646	8	112	36	758	44	17%	<b>450%</b>
	ATC4	5,405	97	112	36	5,517	133	2%	<b>37%</b>
	ATC1	5,390	28	80	0	5,470	28	1%	0%
	ATC2	385	1	0	0	385	1	0%	0%
	ATC3	717	5	112	36	829	41	16%	<b>720%</b>
August	ATC4	6,308	139	112	36	6,420	175	2%	26%

Table 5.12: Assessment of Development Traffic (Monthly Average)

Season	Site	Future Baseline		Development Flows (Typical)		Future Combined		Percentage Change	
		AADT	HGV	AADT	HGV	AADT	HGV	AADT	HGV
June	ATC1	4,384	32	76	0	4,474	32	2%	0%
	ATC2	521	5	0	0	521	5	0%	0%
	ATC3	646	8	90	14	736	22	14%	<b>175%</b>
	ATC4	5,405	97	90	14	5,495	111	2%	14%
July	ATC1	5,390	28	80	0	5,470	28	1%	0%
	ATC2	385	1	0	0	385	1	0%	0%
	ATC3	717	5	90	10	807	15	13%	<b>200%</b>
August	ATC4	6,308	139	90	10	6,398	149	1%	7%

- 5.6.20. It can be seen that with the inclusion of construction traffic, both light and heavy vehicles as well as staff vehicle trips, the overall percentage change in AADT flows remains below the 30% threshold identified in Rule 1 of the EATM<sup>35</sup> guidance as a trigger point for further assessment on any link.
- 5.6.21. Rule 1 also notes a 30% threshold specifically for increases in HGV traffic. In this case, the threshold is surpassed at count site ATC3 in both assessment months and at site ATC4 in June when foundation pours occur, as highlighted in bold.
- 5.6.22. It is noted that the vast majority of staff vehicle trips are focused into the 30-minute period prior to, and following, the working day. In this case the percentage change in flows may trigger the 30% threshold over that short timeframe, especially on the C3010. However, these vehicle trips will comprise cars and minibuses only, and at a time when the network as a whole is very lightly trafficked. Therefore, these traffic increases will be very short lived and are not expected to result in any significant environmental effects in accordance with the EATM guidance.
- 5.6.23. As such, only the potential effects of HGV traffic on the C3010 from Penycwm to the application site temporary construction access (ATC3) and on the A487 east of Penycwm (ATC4) are considered for further assessment.

### Severance

- 5.6.24. Severance refers to the level of crossing difficulty for pedestrians, which may be caused by the introduction of additional traffic or traffic management measures. Crossing difficulty is not specifically affected by the proportion of HGV traffic and therefore the percentage increase as a result of all vehicles (AADT) has been used. The threshold for assessing severance given in EATM is that a 30% increase in traffic would result in a slight severance effect. The guidance also notes that links with low baseline flows do not often result in perceivable effects.
- 5.6.25. No pedestrian demand data is available for the highway network of interest, however during the site visit it was noted that pedestrian activity within the study area was exceptionally low and is likely to remain so throughout a typical day. The lack of pedestrian activity can be attributed to the general lack of frontage development or key destinations. The absence of pedestrian infrastructure beyond the immediate vicinity of Penycwm further supports the understanding that very little pedestrian demand exists.



- 5.6.26. The C3010 and the A487 at this location are considered to have low sensitivity. The magnitude of impact on severance across the study area is below the 30% threshold when considering AADT traffic flows and is therefore considered to be negligible. Therefore, the resultant significance of effect for severance is **neutral/slight** at both sites (ATC3 and ATC4) when a low receptor sensitivity is assigned, as defined in Table 5.3.

#### ***Driver Delay***

- 5.6.27. Overall, the proposed development will result in up to a daily average of 101 (76 LGVs and 25 HGVs) additional vehicle movements on the road network during a concrete pour day. The construction staff traffic results in a very different profile to general construction traffic, and this is addressed separately below.
- 5.6.28. When considering the construction traffic, on average there are just over 7 trips per hour over the 12-hour operational day which equates to less than two additional vehicles every 15 minutes. On the anticipated 27 days when foundations are being poured, this increases to on average 8 trips per hour, which equates to two vehicles every 15 minutes. This level of additional traffic is not expected to result in other road users experiencing any notable increase in delays due to operational issues at junctions or on the highway network in general.
- 5.6.29. At its peak, staff traffic will result in up to 35 vehicles arriving in the AM and 35 vehicles departing in the PM. This traffic is likely to be focused over a 30-minute period preceding or following the working shift. Overall, this traffic results in an average of 1 vehicle every minute. The baseline data presented, specifically in Paragraph 5.4.16, show that the baseline peak periods are outside of these times (pre-07:00 and post-19:00) when the additional traffic levels can be easily accommodated.
- 5.6.30. Despite the percentage increases identified in Table 5.11 and Table 5.12, the magnitude of impact from construction traffic on driver delay is considered to be negligible and will therefore result in an adverse effect of **neutral/slight** significance At both locations (ATC3 and ATC4) when a low receptor sensitivity is assigned.

#### ***Pedestrian Delay (Incorporating Delay to All Non-Motorised Users)***

- 5.6.31. For a project of this type, size and location, pedestrian delay (including consideration of delay to all non-motorised users) is principally caused as a result of severance. Whereby people are forced to wait for longer periods in order to cross against the additional levels of traffic.
- 5.6.32. The magnitude of impact from construction traffic beyond that already identified for severance is considered to be negligible. Therefore, the resultant significance of effect for pedestrian delay is **neutral/slight** adverse at both locations (ATC3 and ATC4) when a low receptor sensitivity is assigned.

#### ***Non-Motorised User Amenity, Fear and Intimidation***

- 5.6.33. Non-motorised user amenity, fear and intimidation are affected by the perceived traffic flow, traffic composition, and the user's separation from the traffic flow.
- 5.6.34. EATM suggests a useful threshold is when the total traffic flow or HGV component is halved or doubled.
- 5.6.35. The magnitude of impact is considered to be proportional to the level of HGV traffic which is in close proximity to pedestrians and other vulnerable road users. However, it is also noted that very low baseline flows are disproportionately impacted and increases from a low baseline do not often result in any perceivable effect.
- 5.6.36. The percentage increases in HGV traffic are very large when considering all scenarios at count site ATC3 (the C3010). Changes in HGV traffic of this magnitude are almost certain to be notable by vulnerable road users, however, the route is considered to be of low sensitivity,

principally due to the low baseline flows and lack of pedestrian demand. Professional judgement has therefore been used to determine the magnitude of impact to be minor.

- 5.6.37. The percentage increase in HGV traffic at ATC4 (the A487) is much lower than at ATC3, only just exceeding the assessment threshold, and is also considered to have only a minor magnitude of impact.
- 5.6.38. Therefore, the resultant significance of effect for non-motorised user amenity, fear and intimidation is **neutral/slight** adverse at both locations (ATC3 and ATC4) when a low receptor sensitivity is assigned.

### **Road Safety**

- 5.6.39. Image 5.1 shows that the number of road collisions in the vicinity of the application site and wider study area is very low. It is also noted that vulnerable road user activity is also extremely low.
- 5.6.40. The estimated increase in construction traffic on the highway network of interest is unlikely to raise any road safety concerns in and of itself. However, it is acknowledged that any increase in traffic movements may increase the potential for collisions. The magnitude of impact on road safety is considered to be minor, irrespective of the relative increases summarised in Table 5.11 and Table 5.12. Therefore, the resultant significance of effect on road safety is **neutral/slight** adverse at both locations (ATC3 and ATC4) when a low receptor sensitivity is assigned.

### Operation

- 5.6.41. It was identified at the scoping stage that an assessment of potential environmental effects should be undertaken for the operational phase, principally to understand how the proposed development will interact with the current operations at Cawdor Barracks. It is understood that the existing site operations will continue until at least 2028. The proposals will result in the new development being expected to be completed in 2029. As a reasonable worst-case assessment scenario, it is assumed the operational traffic for DARC would overlap with ongoing operational traffic for the Barracks.
- 5.6.42. The Cawdor Barracks site is operational 24 hours a day, 7 days a week and will continue to be so once the proposed development is operational. Cawdor Barracks is a working military base, which, until 2028, is occupied by approximately 400 personnel of the 14 Signals Regiment.
- 5.6.43. For the proposed development, operational staff vehicles will arrive on site via the U3010. All staff parking will be provided on site.
- 5.6.44. The proposed development will include the requirement for up to 60 FTE staff members will likely be required on site at any one time, with the remaining 40 FTE on leave or undertaking off-site training, all of whom will travel to the application site each day to work. With the site operating 24 hours per day these arrivals and departures will be staggered across the day as the result of different shift patterns. With an average occupancy of 1.2 employees per vehicle it has been assumed that there will be 50 vehicles arriving and 50 vehicles departing throughout the day.
- 5.6.45. For simplicity and to account for a worst-case scenario, the anticipated operational traffic has been fully applied to the count sites ATC1, ATC3 and ATC4 (using 2027 baseline but accepting that the proposed development will not be operational until 2029), even though that traffic will either route east or west on the A487 but not both. No additional operational traffic is expected on the C3017.

Table 5.13: Assessment of Development Traffic (Operational Staff)

Season	Site	Future Baseline		Development Operational Flows		Future Combined		Percentage Change	
		AADT	HGV	AADT	HGV	AADT	HGV	AADT	HGV
June	ATC1	4,384	32	100	0	4,484	32	2%	0%
	ATC2	521	5	0	0	521	5	2%	0%
	ATC3	646	8	100	0	746	8	15%	0%
	ATC4	5,405	97	100	0	5,505	97	2%	0%
August	ATC1	5,390	28	100	0	5,490	28	2%	0%
	ATC2	385	1	0	0	385	1	0%	0%
	ATC3	717	5	100	0	817	5	14%	0%
	ATC4	6,308	139	100	0	6,408	139	2%	0%

5.6.46. It can be seen from Table 5.13 that with the inclusion of operational staff traffic, the overall percentage change in AADT flows across the highway network of interest is well below the 30% threshold identified in Rule 1 of the EATM guidance. Further assessment of operational traffic is therefore not required.

### National Park Special Qualities

5.6.47. In their landscape and visual scoping opinion consultation response dated 04 May 2023 the PCNPA requested an assessment of the effect of the proposed development on the Special Qualities of the Pembrokeshire Coast National Park (PCNP). These ‘Special Qualities’ are defined as the characteristics and features of the National Park which individually, or in combination, contribute to making the National Park unique. One relates to the ‘accessibility’ of the National Park which is considered in the table below. Others relate to other topics not considered relevant to the assessment of transport and access but are covered in other chapters of this ES (coastal splendour, diverse geology, diversity of landscape, distinctive settlement character, rich historic environment, richness of habitats and biodiversity, space to breathe, remoteness, islands, tranquillity, and wildness, and the diversity of experienced and combination of individual qualities).

5.6.48. The following table provides a summary assessment of the effects of the proposed development on the ‘accessibility’ Special Quality that relates to the PCNP.

Table 5.14: Assessment of Accessibility National Park Special Quality

Special Quality	Likely changes caused by proposed development	Are effects beneficial, neutral, or adverse and reasoned justification	Duration of effect	Are changes important? Do they conserve, enhance, or harm the Special Quality?
Accessibility	Construction and operation of the proposed development will not have significant effects on transport and access as a result of the proposed	Neutral	NA	Quality conserved (unchanged).

development during construction or operation.

## Summary

- 5.6.49. As summarised in Table 5.15, there are no likely significant effects on Transport and Access as a result of the proposed development during construction or operation.

Table 5.15: Summary of Significant Effects

Receptor	Sensitivity	Magnitude of Impact	Significance of Effect
Construction Phase			
Severance	Low	Negligible	Neutral/slight (not significant)
Drive delay	Low	Negligible	Neutral/slight (not significant)
Pedestrian delay	Low	Negligible	Neutral/slight (not significant)
Non-motorised user amenity, fear and intimidation	Low	Negligible	Neutral/slight (not significant)
Road safety	Low	Minor	Neutral/slight (not significant)
Operational Phase			
All	Not assessed	Not assessed	-

## 5.7. Mitigation and Enhancement

- 5.7.1. The proposed development includes a number of mitigation measures during the construction phase which have been identified throughout the design evolution to minimise the potential significant effects of the traffic generated by the proposed development on the highway network of interest.
- 5.7.2. Since no significant effects have been identified, no mitigation and enhancement measures are proposed beyond the design intervention and control measures already embedded in the proposed development.

## 5.8. Cumulative Effects

- 5.8.1. As part of the EIA process, the environment team has undertaken a coordinated, multidisciplinary approach to ensure cumulative effects are considered across disciplines and influenced design where appropriate.
- 5.8.2. The assessment on cumulative effects is presented in Chapter 17 (Cumulative Effects Assessment).
- 5.8.3. No significant intra-cumulative or inter-cumulative effects for this environmental topic are anticipated as a result of the proposed development.



5.8.4. It is noted that some schemes have the potential to overlap with this proposed development, most notably the Newgale Coastal Adaptation Project, however there is insufficient information available on expected construction traffic volumes at the time of writing to enable the traffic effects of the scheme to be taken account of in the assessment. Overlap would only likely happen on the A487 which is not considered to experience any significant effect solely based on the proposed development.

5.8.5. The Construction Traffic Management Plan will include feasible, appropriate, and safe methods of access for construction traffic to the Proposed Development as well as aiming to reduce impacts on residents, and pedestrians (including non-motorised users) as a result.

5.8.6. The appointed contractor will liaise with other local development projects throughout the construction phase of the Proposed Development to avoid any significant overlap in works activities, deliveries, AL, traffic management measures etc. as much as feasibly possible.

## 5.9. Residual Significant Effects

5.9.1. No residual significant effects have been identified.

## 5.10. Monitoring

5.10.1. There is no specific monitoring required specific to this ES chapter. The full CTMP and ALRA will be agreed with PCC at the appropriate times and implemented as agreed, separately to the EIA process.

## 5.11. Summary and Conclusions

5.11.1. This assessment has been carried out to understand the potential Transport and Access impacts associated with the construction and operational phases of the proposed development.

5.11.2. Potential impacts relating to noise generated by traffic from construction of the proposed development have been considered in Chapter 7 (Noise and Vibration). The assessment has scoped out the need for assessing potential effects of operational traffic due to the predicted changes in road traffic during operation being below the relevant criteria for detailed assessment.

5.11.3. It is anticipated that there will be a 21-month construction programme commencing in April 2027. A construction phasing programme is presented as Table 3.2 in Chapter 3 (Proposed Development), and a table summarising typical daily traffic flows is included in Appendix 5.4.

5.11.4. **No significant** effects for the construction phase of the proposed development were identified.

5.11.5. It was identified at the scoping stage that an assessment of potential environmental effects should be undertaken for the operational phase, principally to understand how the proposed development will interact with the current operations at Cawdor Barracks. It is understood that the existing site operations will continue until at least 2028. The proposals will result in the proposed development being completed in early 2029. As a reasonable worst-case assessment scenario, it is assumed the operational traffic would overlap. It is noted that since both the existing site traffic (Cawdor Barracks) and proposed development construction and operational traffic related to this application will use different access locations and junctions on the A487, there is unlikely to be any significant interaction.

5.11.6. Once the 14 Signals Regiment vacate the existing Cawdor Barracks it is possible that even once the DARC site is operational, the traffic flows within the study area will decrease to a lower level than the current baseline.



- 5.11.7. The assessment identified that the overall percentage change in AADT flows across the highway network of interest as a result of operational traffic from the proposed development is well below the 30% threshold identified in Rule 1 of the EATM<sup>35</sup> guidance. This effect is **negligible** and further assessment of operational traffic is not required.
- 5.11.8. There is no specific monitoring required specific to this ES chapter. The full CTMP and ALRA will be agreed with PCC at the appropriate times and implemented as agreed, separately to the EIA process.