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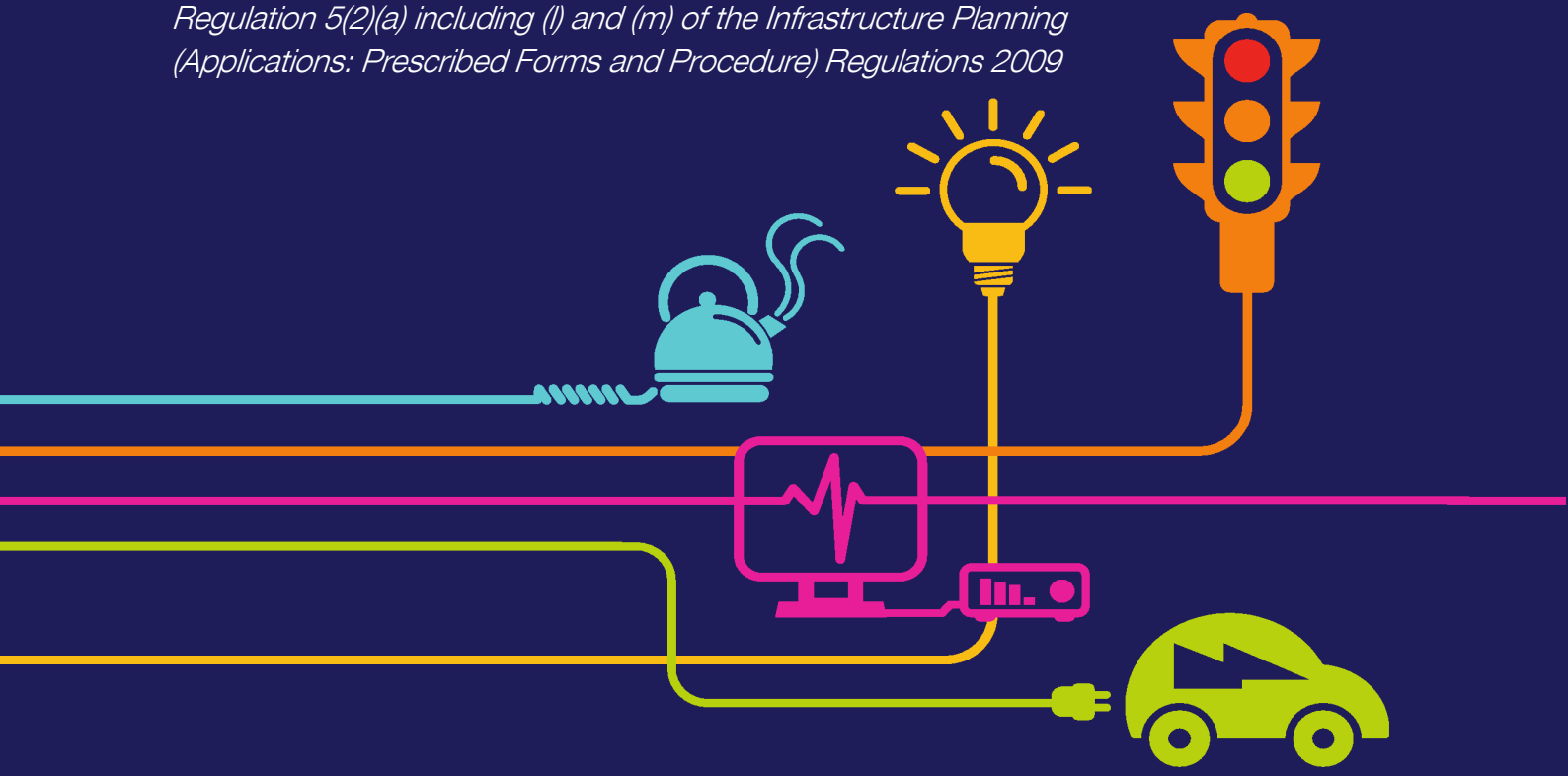
DOCUMENT 5.13

Environmental Statement Chapter 13 Traffic and Transport

National Grid (North Wales Connection Project)

Regulation 5(2)(a) including (l) and (m) of the Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009



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North Wales Connection Project

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Document 5.13 Chapter 13 Traffic and Transport

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1 Introduction

1.1 INTRODUCTION

1.1.1 This chapter presents an assessment of the potential effects arising from the traffic associated with construction, operation, maintenance and decommissioning of the Proposed Development, as described in Chapter 3 Description of the Proposed Development (**Document 5.3**) and Chapter 4 Construction, Operation Maintenance and Decommissioning of the Proposed Development (**Document 5.4**).

1.1.2 This chapter is supported by a number of documents as listed in Table 13.1.

Table 13.1: Associated Supporting Documents

Document Title	Document Number
Transport Assessment (TA)	**Document 5.13.2.1**
Outline Construction Traffic Management Plan (OCTMP)	**Document 7.5**
Construction Environmental Management Plan (CEMP)	**Document 7.4**
Public Rights of Way Management Plan	**Document 7.6**

1.1.3 Other chapters that are useful to review in association with this chapter, as a result of their consideration of traffic movements, are Chapter 14 Air Quality and Emissions (**Document 5.14**), Chapter 15 Construction Noise and Vibration (**Document 5.15**), Chapter 17 Socio Economics (**Document 5.17**), Chapter 19 Intra-Project Cumulative Effects (**Document 5.19**) and Chapter 20 Inter-Project Cumulative Effects (**Document 5.20**).

1.1.4 All technical terms and abbreviations used within this chapter are defined in the Glossary (**Document 1.4**).

2 Legislation and Planning Policy

2.1 INTRODUCTION

2.1.1 This section sets out the legislative and planning policy framework that is relevant to the Traffic and Transport assessment. A full review of compliance with national and local planning policy is provided in the Planning Statement (**Document 7.1**) and a full review of relevant legislation is set out in the Legislation Compliance Audit (**Document 5.28.2.1**).

2.2 LEGISLATION

2.2.1 The Active Travel (Wales) Act 2013, is a document developed as landmark Welsh legislation to make it easier for people to walk and cycle in Wales.

2.2.2 In essence the Act sets out Welsh Government's intention to seek to enable more people to walk, cycle and generally travel by more active methods. It is intended to:

- ensure more people can experience the health benefits of active travel;
- reduce greenhouse gas emissions;
- help address poverty and disadvantage; and
- help the economy to grow by unlocking sustainable economic growth.

2.2.3 The Act therefore requires planning authorities to make provision for, map and promote 'Active Travel' routes for pedestrians and cyclists. It is then the developer's responsibility to acknowledge the existing local Active Travel routes and ensure that there are sufficient connections from the development to the existing network, so that future residents have a clear, direct and safe route from their homes to the wider Active Travel network. As such this legislation is not directly relevant to the Proposed Development, which does.

2.2.4 There is no other traffic and transport related legislation that is considered necessary to review as part of the assessment of traffic and transport related effects.

2.3 NATIONAL POLICY

National Policy Statements

2.3.1 National Policy Statements set out the primary policy test against which the application for a DCO for the Proposed Development has been considered. The specific NPS's that apply to the Proposed Development are the Overarching National Policy Statement for Energy (EN-1), and the National Policy Statement for Electrical Networks (EN-5).

2.3.2 NPS for Electricity Networks Infrastructure (EN-5) does not provide any specific policy in relation to traffic and traffic and transport.

2.3.3 Table 13.2 provides details of the elements of NPS EN-1 that are relevant to this chapter, and how they have been addressed in the ES.

Table 13.2 Compliance with NPS (EN-1)

NPS EN - 1 Section	Where this is covered in the ES
5.13.3 The applicant's ES should include a transport assessment, using the NATA/WebTAG methodology stipulated in the Departments for Transport's Guidance	The Proposed Development has been subject to a TA in accordance with EN-1 Section 5.13.3. The TA methodology is in accordance with both NATA/WebTAG and WelTAG (as the Proposed Development is in Wales) stipulated in the Department for Transport guidance.
5.13.3 Applicants should consult the Highways Agency and Highways Authorities as appropriate on the assessment and mitigation	The appropriate local and national highways authorities have been consulted throughout the ES process, and further information is provided in Chapter 5 Environmental Impact Assessment (EIA) Consultation (**Document 5.5**).
5.13.4 Where appropriate, the applicant should prepare a travel plan including demand management measures to mitigate the impacts.	The TA report includes within it a Framework Travel Plan in accordance with this section of EN-1. This is also included within the CEMP (**Document 7.4**), which in turn is secured through the draft DCO.
5.13.6 A new energy NSIP may give rise to substantial impacts on the surrounding transport infrastructure and the IPC (now PINS) should therefore ensure that	The mitigation measures required in order to address potential effects of the Proposed Development are reported in Section 9 of this chapter. Mitigation is also covered in the following supporting

Table 13.2 Compliance with NPS (EN-1)	
NPS EN - 1 Section	Where this is covered in the ES
the applicant has sought to mitigate these impacts, including during the construction phase of the proposed project.	documents: OCTMP (**Document 7.5**), TA (**Document 5.13.2.1**), CEMP (**Document 7.4**) and PRoW Management Plan (**Document 7.6**). Again these documents are secured through Requirements.
5.13.10 Water-borne or rail transport is preferred over road transport at all stages of the project, where cost effective.	Rail and water-borne transport has been discussed during consultation and reference should be made to the Consultation Report (**Document 6.1**), OCTMP (**Document 7.5**) and TA (**Document 5.13.2.1**).

Planning Policy Wales

2.3.4 Planning Policy Wales (PPW) Edition 9 was published in 2016. It sets out the land use planning policies of the Welsh Government and its commitment to sustainable development.

2.3.5 PPW is supported by topic based Technical Advice Notes (TANs). TAN 18 Transport, published in March 2007, sets out the Welsh Government's aim for integration of land use planning and transport in order to achieve a sustainable pattern of development.

2.3.6 TAN 18 places emphasis on sustainability and the need for sustainable development patterns. Integration is identified as a means of helping the Welsh Government achieve its wider sustainable development policy objectives by:

- 'promoting resource and travel efficient settlement patterns;
- ensuring new development is located where there is, or will be, good access by public transport, walking and cycling thereby minimising the need for travel and fostering social inclusion;
- managing parking provision;
- ensuring that new development and major alterations to existing developments include appropriate provision for pedestrians (including those with special access and mobility requirements), cycling, public transport, and traffic management and parking/servicing;

- encouraging the location of development near other related uses to encourage multiple-purpose trips;
- promotion of cycling and walking;
- supporting the provision of high quality, inclusive public transport;
- supporting provision of a reliable and efficient freight network;
- promoting the location of warehousing and manufacturing developments to facilitate the use of rail and sea transport for freight;
- encouraging good quality design of streets that provide a safe public realm and a distinct sense of place; and
- ensuring transport infrastructure or service improvements necessary to serve new development allow existing transport networks to continue to perform their identified functions.'

2.3.7 Section 6 of TAN18 focuses on the needs of walkers and cyclists and the requirement to safeguard routes for walkers, cyclists and horse-riders. Whilst the Proposed Development would require temporary closure of a number of PRoW during the construction stage, these temporary closures would be discussed with the local authorities and managed accordingly. The PRoW Management Plan (**Document 7.6**) provides further detail on this.

2.3.8 The Proposed Development would require 58 temporary access points (46 in Anglesey and 12 in Gwynedd) of which two would remain as permanent. These are illustrated in the Access and Rights of Way Plans (**Document 4.5**)

2.3.9 The requirements for new accesses are set out within Section 9.16 of TAN 18, with the visibility standards detailed within Annex B of TAN 18. In accordance with this, speed surveys have been undertaken along the links where new access junctions would be required to inform the visibility requirements. Road Safety Audits have also been undertaken and the location and design of the access junctions along with any required mitigation measures have been developed and informed through discussions with the appropriate local authority. This is documented in the OCTMP (**Document 7.5**).

2.3.10 Annex D of TAN 18 focuses specifically on 'Transport Assessment' and emphasises the importance of undertaking early scoping discussions with local authorities. As described within the Transport Assessment (TA) (**Document 5.13.2.1**), consultation has been undertaken with the Isle of Anglesey County Council (IACC), Gwynedd Council and the North and Mid

Wales Trunk Road Agent (NMWTRA), on behalf of the Welsh Government, to discuss the scope of the TA.

2.3.11 A draft of PPW Edition 10 is currently out for consultation. The main differences in relation to traffic and transport matters are a greater emphasis on encouraging sustainable travel choices wherever possible. However, in essence, the changes from Edition 9 are not substantial and would not require any changes to the assessment, should the consultation draft be adopted.

2.4 LOCAL PLANNING POLICY

Relevant Local Planning Policies

2.4.1 The following local planning documents and policies are considered in relation to the Proposed Development within Appendix 13.2 (**Document 5.13.2.2**).

- Anglesey and Gwynedd Joint Local Development Plan 2011-2026, specifically;
  - Strategic Policy PS2: Infrastructure and Developer Contributions;
  - Policy ISA1: Infrastructure Provision;
  - Policy TRA1: Transport Network Developments;
  - Policy TRA4: Managing Transport Impacts;
  - Strategic Policy PS8: Proposals for Large Infrastructure Projects;
  - Strategic Policy PS9: Wylfa Newydd Related Development;
- North Wales Transport Plan (TAITH);
- Mid Wales Transport Plan (TRACC); and
- Anglesey Energy Island Programme/Nuclear New Build Supplementary Planning Guidance.

3 Scope of Assessment and Consultation

3.1 INTRODUCTION

3.1.1 This section describes the scope of the EIA, with reference to the Secretary of State's (SoS) Scoping Opinion, and consultation with key consultees that have influenced the scope of the assessment work. It also considers how feedback from consultation influenced the evolution of the Proposed Development and assessment work undertaken.

3.2 SECRETARY OF STATE'S SCOPING OPINION

3.2.1 Table 13.3 outlines the issues that were raised in the SoS Scoping Opinion and how these have been addressed in the ES.

Table 13.3 Issues Raised in the Secretary of State's Scoping Opinion

Paragraph	Issue Raised by SoS	Response
3.38	It is proposed in Appendix 10.1 of the scoping report that all potential operational traffic and transport related effects of the Wylfa and Pentir substation works, the cable SECs, the direct cable burial, HDD, the tunnel (including the tunnel head houses), the pipe jack, and the bridge deck are scoped out. Section 10.7 of the scoping report justifies this by explaining that traffic movements in the operational phase would be limited to infrequent repair and routine maintenance works and that any effects are considered to be negligible. On this basis, and given the nature of the proposed development, the secretary of state agrees that these matters can be	The forecast traffic associated with the operation of the Proposed Development is reported in Section 9 mitigation and residual effects within this chapter, along with justification for removing from the scope of assessment.

Table 13.3 Issues Raised in the Secretary of State's Scoping Opinion		
Paragraph	Issue Raised by SoS	Response
	scoped out, but advises that the forecast number of traffic movements is indicated in the justification provided in the ES for scoping this matter out.	
3.118	The Secretary of State welcomes the confirmation in this chapter that the Applicant will provide with the ES a Construction Traffic Management Plan, a Traffic Assessment, a Travel Plan, a CEMP, and a PRoW Management Plan. As previously noted, where mitigation is relied upon within the ES to avoid an adverse impact and is proposed to be included within a plan to be secured by the draft DCO, the Secretary of State would expect a sufficiently detailed but draft version of the plan to be provided with the application.	An OCTMP (**Document 7.5**), CEMP (**Document 7.4**) and PRoW Management Plan (**Document 7.6**) have been produced. A TA, including a Framework Travel Plan, is also provided in Appendix 13.1 (**Document 5.13.2.1**).
3.119	The Secretary of State notes that although the Department for Transport's 'Guidance for Transport Assessment' has been superseded by 'Transport Evidence Bases in Plan Making' the Applicant proposes to use the former guidance on the basis that many local authorities continue to advise that it should be relied upon. The Councils are content with this approach as being a starting point for agreement of the scope with highway authorities (see Appendix 3 of this Opinion). The Secretary of State recommends that the Applicant engages further with the Councils	'Guidance for Transport Assessments' has formed the basis for the scope of the TA. Since the publication of the Preliminary Environmental Information Report (PEIR), the scope and methodology for the TA has been further developed through ongoing dialogue with relevant highway authorities. Where there are departures from the extant guidance these have been agreed with the highways authorities. The extant guidance relies upon agreement of the scope with

Table 13.3 Issues Raised in the Secretary of State's Scoping Opinion		
Paragraph	Issue Raised by SoS	Response
	on the assessment methodology and clearly explains in the ES the reasoning for departing from any extant guidance.	highways authorities and this has been undertaken.
3.120	The inclusion of figures in the Scoping Report showing the location of PRoWs is welcomed. The Secretary of State suggests that all PRoWs included in the assessment are identified by a name/number on the corresponding figures submitted with the ES. The Applicant's attention is drawn to the comments of the Councils in relation to identifying features and quantitative baseline information (see Appendix 3 of this Opinion).	PRoWs impacted by the Proposed Development are assessed in Section 9 mitigation and residual effects and are shown on Figure 13.6 (**Document 5.13.1.6**). The Access and Rights of Way Plans (**Document 4.5**) show the temporary stopping up and temporary diversion routes for the PRoW affected by the Proposed Development and assessed in this chapter.
3.121	Paragraph 10.4.1 of the Scoping Report has identified the study area for scoping as comprising the project Scoping Corridor and a further Zone of Influence (ZoI) specifically relevant to traffic and transport; as shown in Figure 10.3. By the time of application, the red line boundary for the Proposed Project is expected to have been refined; the ES should detail the study area used in the assessment and explain the basis upon which the ZoI has been determined. The Secretary of State recommends that the study area (including the ZoI) is discussed and agreed with relevant consultees.	Section 6 study area of this chapter defines the refined study area upon which assessment work is based. At the scoping stage, a Zone of Influence (ZoI) was also incorporated. This ZoI is no longer considered applicable in the context of the assessment, as effects will be reduced to negligible outside the study area as defined in Section 6.
3.122	It is stated in paragraph 10.6.4 of the Scoping Report that many of	Where these effects are identified, the relevant

Table 13.3 Issues Raised in the Secretary of State's Scoping Opinion		
Paragraph	Issue Raised by SoS	Response
	the environmental effects associated with traffic (e.g. noise, vibration, visual, air pollution, dust and dirt, ecological, and heritage and conservation impacts) will be considered in detail in other technical assessments (e.g. Chapters 5, 6, 7, 11, and 12 of the ES), so will not be covered in the traffic and transport chapter. The Applicant should ensure that the location of information relevant to traffic and transport impacts contained in other technical chapters is clearly identified in the traffic and transport chapter.	technical chapters within the ES have been clearly cross referenced.
3.123	The values used to describe the sensitivity of a receptor and the magnitude of an impact, combined in Table 10.13 to determine the significance of an effect, do not reflect the values identified in Tables 10.12 and 10.14, respectively. This should be rectified within the description of the assessment methodology in the ES.	The assessment methodology has been revisited and is clarified in Section 4 methodology of this chapter.
3.124	A number of the cells within Table 10.13 of the Scoping Report identify two descriptors for the level of significance. Where this is the case, the ES should clearly explain and justify the final level of significance which is concluded.	Please see response above for Paragraph 3.123, which outlines a revisited and clarified methodology described more fully in Section 4 methodology of this chapter. The final level of significance is reported, with justification given, in Section 9 mitigation and residual of this chapter.

Table 13.3 Issues Raised in the Secretary of State's Scoping Opinion		
Paragraph	Issue Raised by SoS	Response
3.125	According to paragraph 10.6.26 of the Scoping Report, it appears that slight, moderate, large, and very large effects are considered to represent a significant effect. It is not clear if this is intended and the Secretary of State advises that the Applicant ensures that the methodology, criteria and values used for this assessment are clearly and consistently described in the ES Chapter.	See points above and Section 5 basis of assessment for details of the refined and adopted methodology.
3.126	The Secretary of State notes that there may be a requirement for movement of Abnormal Indivisible Loads (AILs) on the public highway network in relation to pylon and overhead line (OHL) construction and tunnelling. Worst case forecasts of the likely numbers and frequency of AIL movements should be provided in the ES along with forecasts of other traffic movements generated as a result of the project.	Proposed AIL construction traffic routes are illustrated on Figure 13.5 (**Document 5.13.1.5**). AILs on the basis of size and weight are anticipated to be required for elements of the Proposed Development, as documented in the TA (**Document 5.13.2.1**) and the OCTMP (**Document 7.5**) and forecasts for the number of AIL movements are included in Section 9 mitigation and residual effects.
3.127	Should the bridge deck method be utilized, the ES should assess the implications of the disruption that the construction phase could bring to users of the Britannia Bridge and should detail the mitigation measures that would be implemented to minimize this.	The use of the bridge deck is no longer being considered for the Proposed Development (see Menai Strait Crossing Report (**Document 9.6**)). A description of the Proposed Development is provided in Chapter 3 (**Document 5.3**).

3.3 CONSULTATION

3.3.1 Meetings have been held with Isle of Anglesey County Council (IACC), Gwynedd Council and Welsh Government's North and Mid Wales Trunk Road Agent, to discuss the scope, methodology and assessment results of the traffic and transport assessment, as described within this chapter. Chapter 5, EIA Consultation (**Document 5.5**) lists all of the meetings that have taken place and the topics discussed. As well as considering this assessment, considerable consultation has been undertaken with IACC, Gwynedd Council, North Wales Fire and Rescue Service and North Wales Police with regards to informing the design of the Proposed Development in relation to construction vehicle access routes and points and mitigation measures.

3.3.2 Responses to comments from Stage 3 Consultation are provided in Chapter 5 Appendix 5.2 Schedule of Responses to the Preliminary Environmental Information Report (**Document 5.5.2.2**) and the Consultation Report (**Document 6.1)**. Responses to comments provided during the stakeholder review of the draft ES are provided in Chapter 5, Appendix 5.3 Schedule of responses to the technical stakeholder review of the draft Environmental Statement (**Document 5.5.2.3**).

3.3.3 Other transport related consultation has been undertaken with the North Wales Police, Welsh Ambulance Service, North Wales Fire and Rescue Service, National Trust, Network Rail and Horizon Nuclear Power.

3.4 UPDATES SINCE SCOPING

3.4.1 There have been no changes to the proposed approach since scoping; however some refinement to the methodology has been included, which is outlined in Section 5 basis of assessment within this chapter.

3.5 SCOPE OF ASSESSMENT

3.5.1 The scope of the assessment work included within the ES has been informed by the Scoping Opinion and the responses to the PEIR from Stage 3 Consultation consultees, as well as by discussions referred to in Chapter 5 EIA Consultation (**Document 5.5**).

3.5.2 The TA (**Document 5.13.2.1**) was subject to a separate scoping exercise; the scoping note and feedback are provided in Annex A of the TA.

Welsh Language

3.5.3 Consideration has been given to the potential for this topic to impact on the Welsh language in any way, drawing upon the findings of the Welsh

Language Impact Assessment (**Document 5.26**). It has been concluded that there is no potential for the sources of effects or affected receptors dealt with in this chapter to have any effects upon the Welsh language.'.

3.5.4 The contractor will be required to use bilingual road traffic signs as part of any temporary traffic management measures implemented throughout the construction period, thus increasing exposure to the Welsh language for the general road user.

3.5.5 Additionally, there are measures in the Construction Environment Management Plan (CEMP - **Document 7.4**) which seek to further reinforce a commitment to reducing the impact on Welsh language. GP21 refers to a Community Relations team which will include Welsh speakers, whilst GP31 refers to a Code of Conduct that Contractors will be required to sign up to, which will require the contractor to respect the Welsh language.

4 Methodology

4.1 INTRODUCTION

4.1.1 This section outlines the technical methods used to determine the increases in traffic (over and above the baseline figures reported in Section 7 baseline conditions) considered likely to occur as a result of the Proposed Development (i.e. the impacts, for example the % increase in traffic) and how significant the effects (for example severance) of these impacts are likely to be.

4.1.2 The methodology was first proposed in the ES Scoping Report and has been developed and refined following consultation with stakeholders and feedback received within the Scoping Opinion. A preliminary assessment of traffic and transport effects was included in the PEIR, and comments on that document have been reflected in the methodology for ES assessment presented in this chapter.

4.2 GUIDANCE SPECIFIC TO TRAFFIC AND TRANSPORT

4.2.1 The need for an assessment of Traffic and Transport effects for developments such as the Proposed Development is highlighted in several documents and guidance notes. The Department for Transport (DfT) document 'Guidance on Transport Assessments' (2007) states:

'The environmental impacts of any significant development need to be addressed. This might include it being covered by a separate Environmental Statement which involves an assessment of the development's potential environmental implications, including those that are transport related. This will help ensure the impacts and the scope for mitigating them are properly addressed' (Ref 12.9).

4.2.2 In relation to this, a key guidance document was produced by the Institute of Environmental Assessment (IEA), (now the Institute of Environmental Management and Assessment (IEMA)), in the form of 'Guidelines for the Environmental Assessment of Road Traffic' (1993) ('the IEMA Guidelines').

4.2.3 The IEMA guidelines identify that the following environmental effects may be considered important when considering traffic from an individual development:

- Noise;
- Vibration;
- Visual Impacts;
- Severance;
- Driver Delay;
- Pedestrian Delay;
- Pedestrian Amenity;
- Hazardous Loads;
- Air Pollution;
- Dust and Dirt;
- Ecological Impact; and
- Heritage and Conservation.

4.2.4 Of these effects, many are to be considered in detail as part of other technical assessments; Chapter 15 Construction Noise and Vibration (**Document 5.15**), Chapter 7 Landscape Assessment (**Document 5.7**), Chapter 8 Visual Assessment (**Document 5.8**), Chapter 14 Air Quality and Emissions (**Document 5.14**), Chapter 9 Ecology and Nature Conservation (**Document 5.9**) and Chapter 10 Historic Environment (**Document 5.10**).

4.2.5 Whilst not on the recommended list within the IEMA Guidelines, reference is made to effects of Fear and Intimidation and Highway Safety, which were considered in the PEIR and are also considered in the ES. Following discussions with the local planning authorities, effects on PRoW are also considered in this chapter, as well as in Chapter 17 Socio Economics (**Document 5.17**) and Chapter 9 Visual Assessment (**Document 5.8**).

4.2.6 This chapter therefore considers the following specific effects, which are not addressed in other chapters of the ES:

- Severance;
- Driver Delay;
- Pedestrian Delay;

- Pedestrian Amenity;
- Fear and Intimidation;
- Highway Safety; and
- PRoW.

4.2.7 The Proposed Development would not be likely to involve the transportation of hazardous loads (for example special wastes, toxic materials and chemicals) during construction, operation or decommissioning. Any unforeseen hazardous waste that were found and which required transportation would be managed and transported in a safe manner and in accordance with current regulations. As such hazardous loads are not covered in this chapter or any other chapter of this ES.

4.2.8 The effects considered in this chapter have been assessed in the context of two 'rules of thumb' which are taken from the IEMA Guidelines, and which help to define the road links that need to be considered within the assessment.

- Rule 1: Include highway links where total traffic flows are predicted to increase as a consequence of a development by more than 30% (or where the number of Heavy Goods Vehicles (HGVs) is predicted to increase by more than 30%); and
- Rule 2: Include any specifically sensitive areas where traffic flows are predicted to increase as a consequence of a development by 10% or more. Sensitive areas may be defined as locations near to more vulnerable user groups, such as school children, people with disabilities or the elderly, or accident black spot areas, roads at or near capacity, or links with high pedestrian flow.

4.2.9 Whilst these rules are acknowledged, this assessment considers the effects arising from changes to total traffic and HGV volumes on all highway links that have been identified for the routeing of construction traffic, regardless of whether they exceed either of the two 'rules of thumb'. This ensures the possible environmental effects arising from all traffic associated with the Proposed Development are subject to robust assessment.

4.2.10 It is important to note that the guidelines do not distinguish between temporary and permanent changes in traffic flows, whereas, in reality, short duration increases are likely to be more tolerable than permanent increases, and therefore less significant. Therefore, although the level of effect is initially reported for a peak week of traffic the methodology set out in the IEMA Guidelines assumes this is a permanent increase; as such professional

judgement has been applied in considering the influence shorter durations may have on the overall significance of effects.

4.2.11 Typically, when assessing the impacts of traffic effects, there are a range of particular groups and locations which may be sensitive to changes in traffic conditions compliant with the 'rules of thumb' previously outlined.

4.2.12 These are outlined in the IEMA Guidance as 'Affected Parties', as follows:

- People at home;
- People in work places;
- Sensitive groups including children, elderly and disabled;
- Sensitive locations, e.g. hospitals, churches, schools, historic buildings;
- People walking;
- People cycling;
- Open spaces, recreational sites, shopping areas;
- Sites of ecological/nature conservation value; and
- Sites of tourist/visitor attraction.

4.2.13 The effects of the Proposed Development on sites of ecological and nature conservation value are dealt with in detail in Chapter 9 Ecology and Nature Conservation. Effects on tourist and visitor attractions are considered in Chapter 17 Socio Economics. The IEMA guidance states that this list of affected parties is not exhaustive. One affected party that is not on the list but is nevertheless considered later in this assessment is 'road users'.

4.2.14 All of the affected parties have one thing in common which is that their potential exposure to changes in traffic volumes comes about through their proximity to a construction traffic route.

4.2.15 In this assessment, a receptor is defined not by individual affected party, but by location. This is described in further detail in Section 4.6 assessment criteria.

4.3 BASELINE DATA GATHERING AND FORECASTING METHODS

4.3.1 Baseline data have been collated for the construction traffic routes (Figure 13.2 (**Document 5.13.1.2**)) using a variety of sources. These are briefly

outlined below; full details are included in the TA (**Document 5.13.2.1**) and more detail is provided in this chapter in section 7 baseline conditions.

Traffic Count Data

4.3.2 Traffic count data have been captured for all highway links which are identified as construction traffic routes, as shown on Figure 13.2 (**Document 5.13.1.2**). Automatic Traffic Count (ATC) data, using pneumatic tubes installed over the carriageway, have been used to derive 24 hour, 7 day per week flows, as well as traffic speed information. The ATC data were classified in order to derive the proportions of Light Goods Vehicles (LGVs) and HGVs.

4.3.3 In addition to the ATC data, Manual Classified Counts (MCTC) were undertaken in order to determine traffic turning counts at key road junctions within the study area, as listed within Table 13.4. This data has been used to inform the junction capacity assessment undertaken in the TA (**Document 5.13.2.1**). All traffic survey sites (ATC and MCTC) are presented in Figure 13.4 (**Document 5.13.1.4**).

Table 13.4 MCTC Locations

Junction Ref	Name	Type
1	A5025/Wylfa Access	Priority
2	A5/A5025	Signal
3	A55 Jct 3	Roundabout
4		
5	B511/B5112 Llanerchymedd	Mini Roundabout
6	A5/A4080/B5112 Treban	Crossroad
7	A55 Jct 5	Roundabout
8		
9	B5111/Bachau Llanerchymedd	Priority
10	B5111/B5110	Priority
11	B5110/Ffordd Cae Sel	Mini Roundabout
12	B5420/Ffordd Cae Sel	Mini Roundabout
13	A5114/Industrial Estate Road	Priority
14	A55 Jct 6	Roundabout

Table 13.4 MCTC Locations		
Junction Ref	Name	Type
15		
16	A55 Jct 7	Priority
17		
18	A5/A5152	Roundabout
19	A5/NCR8 Llandaniel	Priority
20	A5/Star Overbridge	Priority
21	Jct 7A/A5/Pont Ronwy Link	Staggered Crossroads
22		
23	A5/A4080 Tollgate	Staggered Crossroads
24	A55 Jct 8	Priority
25		
26	A5025/B5420 Four Crosses	Roundabout
27	A55 Jct 8A	Priority
28		
29	A55 Jct 9	Roundabout
30		
31	B4547 Nant-y-Garth	Priority
32	A4244/B4547/B4366	Roundabout
33	A5/A4244	Roundabout
*34	A5025/Access A5a	Priority
*35	B4547/Pentir Access F14	Priority
**36	Llangefni Link Road (LLR) Jct 1	Roundabout
**37	LLR Jct 2	Roundabout
**38	LLR Jct 3	Roundabout
**39	LLR Jct 4	Roundabout
**40	LLR Jct 5	Mini Roundabout

Table 13.4 MCTC Locations		
Junction Ref	Name	Type
42	UR 4 /B5111	Priority
* Junction turning counts derived from ATC data and forecast movements into existing site		
* *Junction turning counts extracted from LLR TA for 2029 Base + Dev + Link Road scenario		

4.3.4 The DfT 'Guidance for Transport Assessment' recommends that traffic flows are derived using a 'neutral' month (i.e. a month that is unlikely to feature school holidays), and data were therefore collected in October and February, which are considered to be neutral months (NB counts were taken outside of school holidays). Some surveys were also undertaken in August and, as a result, it has been possible to consider concerns raised by the highway authority in relation to seasonal traffic volumes, with the summer representing peak tourist season for Anglesey and Gwynedd.

4.3.5 The primary assessment in both Section 9 mitigation and residual effects and the TA (**Document 5.13.2.1**) is based on the neutral month baseline. Sensitivity tests are included in the TA, reflecting the differences in observed August traffic flows with data from a neutral month.

4.3.6 The A55 traffic flows have been sourced using the DfT's online count point service. The traffic figures are produced annually for each junction to junction link on the major road network. The data present flows in AADT for each vehicle class along the link. Using the classes provided, the data can be disaggregated into light/heavy vehicle flows. The base year for the A55 vehicle flows is 2016[1], therefore a Trip End Model Presentation Program (TEMPro) growth factor has been applied to represent background traffic growth between 2016 and 2023.

4.3.7 2023 has been chosen as the future baseline year as it represents the final year of significant construction activity. This year has also been discussed with IACC and Gwynedd Council as being a suitable assessment year as part of the scoping for the TA as it will represent increased background traffic on

[1] This was the latest available data at the time of writing.

which to base the junction modelling within the assessment. The ES has therefore applied a consistent future year scenario to that of the TA.

4.3.8 Table 13.5 below provides a summary of the collated traffic count data used in assessment work, both later in this chapter and in the TA report.

Table 13.5: Summary of Traffic Count Data

Date	Data Type	Locations	Rationale
Between 1 August 2016 and 10 August 2016	ATC and Speed Data	18no ATC /speed survey sites on Anglesey and Gwynedd	Data to inform access design and determine seasonal flow variations
Between 3 October 2016 and 10 October 2016	ATC and Speed Data	46no ATC /speed survey sites on Anglesey and Gwynedd	Neutral month[2] data for assessment work in the ES and TA, to inform access design
Between 7 December 2016 to 14 December 2016	ATC and Speed Data	16no ATC /speed survey sites on Anglesey and Gwynedd	To inform access design
Between 1 February 2017 to 15 February 2017	Manual Classified Turning Counts and Queue surveys	28no MCTC surveys and 28no queue length surveys at junctions on Anglesey and Gwynedd	Neutral month data for capacity assessment work in the ES and TA, to inform access design

2 'Neutral Month' – month avoiding main and local holiday periods, local school holidays and half terms, and other abnormal traffic periods.

Table 13.5: Summary of Traffic Count Data			
Date	Data Type	Locations	Rationale
18 April 2018	Manual Classified Turning Count and Queue survey	1no MCTC and Queue Survey at Ty'n Ffrwd priority junction, Anglesey.	In response to IACC comments regarding the scope of assessment.

Accident Data

4.3.9 Accident data have been sourced using CrashMap for both Gwynedd and Anglesey. CrashMap provides Personal Injury Accident (PIA) information from recorded collisions on the roads of Great Britain. Data were recorded for the most recent 5 year period along all of the identified construction traffic routes. Information taken from this is used in analysis later in this chapter and in the TA report (**Document 5.13.2.1**).

Public Rights of Way

4.3.10 Desktop analysis was undertaken to identify the PRoW that would be crossed by the Proposed Development and site visits were undertaken to identify current access provision, PRoW signposting and onward connections between PRoW. Ordnance Survey maps have been referred to and definitive PRoW maps were referred to online on the local council's websites. Additionally, liaison has been ongoing with the PRoW officers for IACC and Gwynedd.

4.3.11 Table 13.6 below summarises the sources of data collated from other organisations.

Table 13.6: Summary of data collection from organisations	
Source	Data
YGC – Ymgynghoriaeth Gwynedd Consultancy	Traffic Data: ATC data, Speed Survey data and Manual Classified Turning Counts.
CrashMap	Accident Data

Table 13.6: Summary of data collection from organisations	
Source	Data
DfT Countpoint	A55 AADT Data
Isle of Anglesey County Council	Traffic Regulation Orders, PRoW
Gwynedd Council	PRoW

Deriving a Future Baseline

4.3.12 In order to determine a future baseline scenario, use has been made of the TEMPro database which determines background traffic growth on an annual basis for a specified time period.

4.3.13 The future baseline year assessed later in this chapter is 2023. The anticipated peak construction year for the Proposed Development would be anticipated to be 2023 where several significant traffic generating activities are programmed to be undertaken.

4.3.14 The derivation of the future baseline is considered further in Section 7 baseline conditions.

Consideration of Wylfa Newydd Power Station

4.3.15 The Wylfa Newydd Power Station site is proposed to be located on land beside the Wylfa Nuclear Power Station, which is now being decommissioned. Construction of Wylfa Newydd Power Station is likely to be undertaken concurrently with construction of the Proposed Development, generating its own construction traffic, which is assessed in Section 10 cumulative effects and in Chapter 20 Inter-Project Cumulative Effects (**Document 5.20**), where a description of the Wylfa Newydd Power Station Project is also provided.

4.3.16 The Wylfa Newydd Power Station scheme proposes online and offline highway improvements along the A5025. It has been assumed that the A5025 will remain available for use during the construction period of the Proposed Development; in either it's current or proposed alignment following the improvements.

4.3.17 The TA does not assess the impact of traffic resulting from the Proposed Development on any new junctions associated with these improvements

within the TA (**Document 7.13.1.2**). It is considered that as the new junctions would provide additional capacity, a capacity assessment of the existing route represents a 'worst case'. However, the effects on receptors along the realigned sections of the A5025 are considered in this chapter.

4.3.18 Incorporating Wylfa Newydd construction traffic flows would raise the baseline traffic against which construction traffic associated with the Proposed Development would be assessed. This would reduce the percentage increases in traffic arising from the development.

Consequently, it is considered appropriate for the assessment of the traffic and transport effects of the Proposed Development to be assessed against a future baseline which excludes Wylfa Newydd Power Station construction traffic.

4.3.19 It is therefore considered that the adopted methodology in this regard represents a robust, worst case approach to deriving the impact of vehicle trip activity related to the Proposed Development.

Proposed Development Forecasting

4.3.20 The potential Traffic and Transport effects of the Proposed Development would primarily relate to the construction phase, which would occur over a period of around six and a half years..

4.3.21 There are essentially three main elements to the Proposed Development that feature specific traffic generating construction activity, as follows:

- Substation works at Wylfa and Pentir
- OHL works; and
- Tunnel construction and Tunnel Head House/Cable Sealing End Compound (THH and CSEC) works.

4.3.22 These activities are summarised in Table 13.7

Table 13.7: Main traffic generating construction activities for each element of the Proposed Development

Element of the Proposed Development.	Key traffic generating activities	Peak traffic generating activity
OHL	Enabling Works	

Table 13.7: Main traffic generating construction activities for each element of the Proposed Development		
Element of the Proposed Development.	Key traffic generating activities	Peak traffic generating activity
	Foundation Construction	Construction of Working Areas Peak activity is anticipated to occur on the construction traffic routes when several working areas accessed by the same link are constructed simultaneously.
	Construction of Working Areas	
	Delivery of Steelwork	
	Re-instatement	
THH and CSEC	Enabling Works	Main Tunnel Drive Peak activity would be likely to occur along the construction traffic routes during the main tunnel drive, where large volumes of excavated material would be removed from site on a daily basis.
	Braint Shaft Construction	
	Tŷ Fodol Shaft Construction	
	Main Tunnel Drive	
	Cable Sealing End Compound	
	Re-instatement	
Substations	Enabling Works	Peak activity at Wylfa would be likely to occur during the civil works, particularly the construction of the contractor's compound and the importing of large volumes of concrete and granite chippings. Peak activity at Pentir substation would be likely to occur when large volumes of spoil removed from site and large volumes of stone would be delivered to site
	Civil Works/Waste and Soil Removal	
	Electrical Works/Substation Upgrades	
	Commissioning	

Table 13.7: Main traffic generating construction activities for each element of the Proposed Development		
Element of the Proposed Development.	Key traffic generating activities	Peak traffic generating activity
		ahead of the substation upgrades.

4.4 TECHNICAL ANALYSIS

Assigning Construction Traffic to the Highway Network

4.4.1 Once the construction traffic trips for each activity associated with the Proposed Development were determined, linked to the construction programme which identifies when and for what duration activity would take place, the next step was to assign this traffic to the local highway network. The principal traffic routes local to the Proposed Development are shown in Figure 13.1 (**Document 5.13.1.1**), from which appropriate construction traffic routes have been identified (as shown on Figure 13.2 (**Document 5.13.1.2**).

4.4.2 Each working area within the Proposed Development would be served by a temporary access bellmouth as shown in the Access and Rights of Way Plan (**Document 4.5**). Traffic was therefore assigned to each bellmouth, and each bellmouth allocated a proposed route upon which construction traffic would be proposed to follow. This may involve a number of highway links within the study area.

Tunnel and Substations

4.4.3 There are also some instances where there is a choice of two construction traffic routes to get to working areas. For the tunnelling and substation elements, all potential access points and construction traffic routes to the respective substation and tunnel working areas were assigned 100% of the forecast vehicular movements. This method has been applied to ensure that the maximum potential effect along a construction traffic route is reported and potential effects are never underestimated.

Overhead Line

4.4.4 Where there is a route choice associated with the OHL element of the Proposed Development, a more detailed approach has been adopted. To determine the amount of construction traffic assigned to a link where journey

time differences are relatively modest between two routes, a robust method has been devised to ensure that traffic along a given link is not underestimated in this chapter and the TA (**Document 5.13.2.1**).

4.4.5 A route which has been evaluated to have a clear journey time benefit, regardless of how small, has automatically been assigned 100% of possible traffic to a working area. However, where two links have absolute differences below a certain level, 100% has been assigned to the quickest route and a proportion of 100% has been assigned to the alternative route. This proportion relates to the 'generalised cost'[3] difference between the alternative routes.

4.4.6 The WebTAG databook has been used to determine the Value of Time (VoT) and Vehicle Operating Cost (VoC) to estimate a time threshold at which there would be significant cost benefit from using one route as opposed to another. Following this exercise it has been estimated that journey times with an absolute time difference of five minutes or less would require traffic to be distributed according to Table 13.8. Where the alternative journey would be 5 minutes longer than the quickest route, the route is not assigned any traffic. In this example 'Route A' is identified as being the quickest route.

Table 13.8 Method for Assigning OHL Construction Traffic where Route Choice Exists

Journey Time Difference (mins)	Route A Assigned Proportion	Route B Assigned Proportion
1	100%	100%
2	100%	80%
3	100%	60%
4	100%	40%

[3] Generalised cost combines time and money in a single measure. The key to the calculation of generalised cost is the notion of the value of time. The value of time represents the money a traveller would be prepared to spend in order to save time travelling. Generalised cost can be expressed as generalised time or generalised money. Generalised time is preferable because time is a constant basis for measurement. If the value of time has units of pence per hour, Generalised Time in Hours = (Time in Hours) + (Money in Pence/Value of Time); Generalised Money in Pence = (Time in Hours * Value of Time) + (Money in Pence)

Table 13.8 Method for Assigning OHL Construction Traffic where Route Choice Exists		
Journey Time Difference (mins)	Route A Assigned Proportion	Route B Assigned Proportion
5	100%	20%
>5	100%	0%

4.5 CONTINGENCY ROUTES

4.5.1 There are a number of construction traffic routes that have been identified for contingency use only for construction of the Proposed Development. These routes would only be used if one of the primary construction traffic routes was unavailable.

4.5.2 More detail on the identification of contingency routes and the definition of a non-contingency route being 'unavailable' is provided in the OCTMP (**Document 7.5**). In summary, a non-contingency route is considered to be 'unavailable' if it is either closed (by the highway authority or the police, for example following an accident) or it is agreed with the LHA that it is temporarily unavailable, or is subject to a new restriction making it unsuitable for construction traffic (for example a newly applied weight or height restriction). This definition applies to both to a permanent or temporary closure or restriction.

4.5.3 For the purposes of assessment, peak construction traffic has been assigned to both primary and contingency routes.

4.5.4 This approach has been adopted to consider the maximum potential effect on each link and junction, irrespective of whether it is situated on a primary or a contingency route.

4.5.5 Any effects identified on contingency routes would be experienced infrequently and would be likely to be for short durations, in the event that preferred routes are unavailable. Were a contingency route to be used then the effect reported on the preferred route would not materialise. This is reflected in the commentary in Section 9 mitigation and residual effects.

4.6 TWO STAGE ASSESSMENT

4.6.1 This chapter is based on a two-stage assessment approach; the primary and secondary assessment.

Primary Assessment

4.6.2 The Primary Assessment identifies a peak week of vehicle movements for individual links. This therefore represents a worst case scenario in terms of assessing the effects that directly relate to an increase in traffic numbers on a particular week.

4.6.3 On links where effects are found to be not significant using this Primary Assessment, and bearing in mind that all factors of magnitude other than for PRoW assume effects are permanent rather than temporary, they are not subject to a secondary assessment.

Secondary Assessment

4.6.4 The Secondary Assessment differs from the Primary Assessment in that, rather than using a peak week, an average weekly flow is taken for each individual link using the peak year of construction activity and the total construction trips within that year. This is because in some instances the peak week level of traffic endures for only a short period of time (a little as one week) whereas in other instances it endures for longer (up to 40 weeks). The secondary assessment therefore seeks to make the assessment of effects more representative and is also consistent with Chapter 15 Construction Noise and Vibration (**Document 5.15**) and Chapter 14 Air Quality and Emissions (**Document 5.14**).

4.6.5 As the Secondary Assessment uses the average rather than peak weekly flow, it therefore results in a reduced weekly construction traffic flow compared to the Primary Assessment, although on some links the peak week endures for 40 weeks and as such the average is not substantially lower than the peak week. The methodology behind the Secondary Assessment is consistent with the approach to assessment used within Chapter 15 Construction Noise and Vibration (**Document 5.15**) and Chapter 14 Air Quality and Emissions (**Document 5.14**), which also assess the effects of changes to annual average traffic flows.

4.7 ASSESSMENT CRITERIA

4.7.1 This section provides a description of the categorisation of value and sensitivity of receptors, how the magnitude of effects is quantified, and how the overall significance of the effect is judged, based on combining the magnitude of the effect with the value/sensitivity of the receptor.

Value and Sensitivity of Receptors

4.7.2 As discussed earlier in Section 4.2 guidance specific to traffic and transport in this assessment, a receptor is defined not by individual affected party, but by the link they are using at the time.

4.7.3 To expand on this, an individual cyclist (the affected party) might use multiple routes, some of which experience varying degrees of change to traffic flows as a consequence of the Proposed Development. It is considered inappropriate to take the highest degree of traffic flow change experienced by the cyclist and conclude that this is the impact of the Proposed Development, when there may be multiple routes used by the cyclist that have a considerably lower degree of change in traffic flows.

4.7.4 A review has been undertaken of all construction traffic routes and each link, or section of link, has been given an overall level of sensitivity based on the character and the presence of certain receptors along the link. This sensitivity designation relates to the affected parties listed in Section 4.2.

4.7.5 Where a construction route does not feature residential dwellings, footpaths, cycle paths or other features of the built environment likely to be used by the affected parties, then it is determined as having a low sensitivity, unless the LHA has advised of noteworthy cycling and pedestrian activity on routes with no such features.

4.7.6 Table 13.9 considers affected parties and built environment indicators and describes the rationale behind assigning overall highway link sensitivity to individual links.

Table 13.9: Categorising the Overall Sensitivity of a Highway Link

Affected Party	Built Environment Indicator along Highway Link	Highway Link Sensitivity to Changes in Traffic Flow
People at home	Residential Properties	**Medium**: Where there are a number of properties with direct frontage to the highway link being used as a construction route.

Table 13.9: Categorising the Overall Sensitivity of a Highway Link		
Affected Party	Built Environment Indicator along Highway Link	Highway Link Sensitivity to Changes in Traffic Flow
		Low: Where there are few properties with direct frontage to the highway link being used as a construction traffic route.
People in workplaces	Offices, industrial units, employment uses	**Low**
Sensitive groups (children, elderly and disabled)	Schools, play areas, care/retirement homes, disabled parking bays	**High:** Where there are multiple indicators of sensitive groups with direct frontage onto the highway link being used as a construction traffic route
		Medium: Where one indicator of sensitive groups is present with direct frontage onto the highway link being used as a construction traffic route
		Low: Where no indicator of sensitive groups are present
Sensitive locations (Hospitals, places of worship, schools historic buildings)	Hospitals, places of worship, schools, historic buildings	**High:** Where there are multiple indicators of sensitive locations
		Medium: Where one indicator of a sensitive location is present
		Low: Where no indicator of sensitive locations are present

Table 13.9: Categorising the Overall Sensitivity of a Highway Link		
Affected Party	Built Environment Indicator along Highway Link	Highway Link Sensitivity to Changes in Traffic Flow
People walking	Footways, PRoW, crossings	**Medium:** Indicators present on highway link
		Low: Indicators not present on highway link
People cycling	On/off-road designated cycle routes	**Medium:** On-road designated cycle routes present along highway link
		Low: Off-road designated cycle routes present along highway link
Open spaces, recreational sites, shopping areas	Parks, play areas, shops, community centres	**High:** Where there are multiple instances or indicators likely to be used by sensitive groups (i.e. children)
		Medium: Where one indicator is present that is likely to be used by sensitive groups (i.e. children)
		Low: Indicators that are unlikely to be used by sensitive groups
Road users	Roads, junctions, road classification, baseline traffic volumes, signage.	Determined by the presence of other affected parties in this table

4.7.7 Based on the criteria outlined in Table 13.9 each of the highway links allocated as construction routes for the Proposed Development have been assigned an overall link sensitivity. Table 13.17 in Section 7 baseline conditions presents this.

4.7.8 It is acknowledged that allocating an overall link sensitivity may not robustly consider the effects on individual built environment indicators used by highly sensitive groups along a link that is considered to have an overall link sensitivity of medium. In order to address this, an extended assessment is undertaken in Section 9 mitigation and residual effects to determine the effect of the Proposed Development at these locations. For the purposes of this assessment, built environment indicators used by highly sensitive groups are considered to be:

- School/colleges;
- Playgrounds; and
- Retirement Homes.

Magnitude of Effects

4.7.9 This chapter assesses a range of potential effects that could be experienced during the construction stage of the Proposed Development and this section identifies how magnitude is considered for each.

4.7.10 Severance is considered here in the context of driver severance, when there is difficulty accessing onto a heavily trafficked road. This assessment considers both total traffic and the proportion of HGVs. The guidance for thresholds of magnitude is taken from DMRB Volume 11, Section 3, Part 8.

4.7.11 Pedestrian Delay occurs when there is difficulty crossing a heavily trafficked road. Effects are only likely to be realised when the total two way traffic on the carriageway exceeds 1,400 vehicles per hour (IEMA Guidelines).

4.7.12 Pedestrian Amenity is similar to Pedestrian Delay in that there needs to be a fairly significant proportional increase in traffic for baseline effects to be considerably worsened. The IEMA guidelines suggest that traffic needs to double for effects to become significant. This assessment acknowledges that lower proportional increases may have minor or moderate impacts.

4.7.13 Fear and Intimidation occurs through a combination of traffic flow, speed, proportion of HGVs and the proximity of the above to people or receptors on highway links. These indicators are often heightened by a perceived lack of protection or buffers from the highway or through narrow or non-existent footways. The assessment has considered each road on a case by case basis, however there are indicative thresholds provided in the IEMA guidelines which are presented in Table 13.10.

4.7.14 Driver Delay is an effect cited in the IEMA guidance and relates to incremental increases in traffic (as outlined in Table 13.10). As a further consideration, where any temporary road closures or traffic management is likely to be in place to enable the construction of the Proposed Development, any additional delay caused as a consequence of following diversion routes has been reported.

4.7.15 Highway safety considers PIA data obtained from CrashMap for the last five years at junctions and links along the proposed construction traffic routes. These have been used to assess whether the additional traffic during construction of the Proposed Development would be likely to have a detrimental effect of road safety. A detailed methodology used in the Department for Transport's WebTAG guidance is provided in the TA (**Document 5.13.2.1**).

4.7.16 PRoWs are assessed in a similar fashion to Driver Delay. Increases to traffic flows where PRoW intersect with highway links are considered on a percentage increase basis. However, where PRoWs are diverted or closed in part these are considered on the basis of how long disruption to the existing route would occur for.

4.7.17 Table 13.10 summarises the criteria that are assessed in Section 9 mitigation and residual effects, along with the thresholds used to determine whether effects are considered Very Low, Low, Medium or High. Within this table, neither the sensitivity of receptors, nor the duration of effects, is taken into consideration. This table is formed using IEMA Guidelines, DMRB and professional judgement.

Table 13.10: ES Magnitude Criteria

Impact	Very Low	Low	Medium	High
Severance	Increase in total traffic flows of 29% or under (or increase in HGV flows under 10%).	Increase in total traffic flows of 30-59% (or increase in HGV flows of between 20%-39%.	Increase in total traffic flows of 60%-89% (or increase in HGV flows between 40%-89%.	Increase in total traffic flows or HGV flows of 90% and above.
Pedestrian Delay	Total traffic flows under 1,400 per hour.	Where traffic flows exceed 1,400 vehicles per hour the severity of the impact will be determined on a case-by-case basis based on receptor sensitivity.		

Table 13.10: ES Magnitude Criteria				
Impact	Very Low	Low	Medium	High
Pedestrian Amenity	Increase in total traffic flows of 49% or under.	Increase in total traffic flows of 50-69%.	Increase in total traffic flows of 70%-99%.	Increase in total traffic flows of 100% or above.
Fear and Intimidation	Increase in total traffic flows or HGV flows of 29% or under (or increase in HGV flows under 10%).	Increase in total traffic flows of 30-59% (or increase in HGV flows of between 10%-39%.	Increase in total traffic flows of 60%-89% (or increase in HGV flows between 40%-89%)	Increase in total traffic flows or HGV flows of 90% and above.
Driver Delay	Increase in total traffic flow of less than 29%.	Increase in total traffic flow of between 30% and 59%.	Increase in total traffic flow of between 60% and 89%.	Increase in traffic flow of 90% and above.
Highway Safety	Increase in total traffic flows of 30% or under (or increase in HGV flows under 10%).	All links estimated to experience increases in total traffic flows above 30% or increases in HGV flows above 10% are analysed further on a case by case basis.		
PRoW	Increase in total traffic flows or HGV flows of 29% or under (or increase in HGV flows under 10%) on a link intersecting a PRoW. Or Where there would be a temporary	Increase in total traffic flows of 30-59% (or increase in HGV flows of between 10%-39% on a link intersecting a PRoW. Or Where there would be a temporary	Increase in total traffic flows of 60%-89% (or increase in HGV flows between 40%-89%) on a link intersecting a PRoW Or Where there would be a temporary increase in	Increase in total traffic flows or HGV flows of 90% and above on a link intersecting a PRoW. Or Where there would be a short term

Table 13.10: ES Magnitude Criteria				
Impact	Very Low	Low	Medium	High
	increase in pedestrian journey length along a road or other PRoW of one to five days due to short term closure (managed) of the PRoW	increase in pedestrian journey length along a road or other PRoW of one to four weeks due to short term closure (managed) of the PRoW	pedestrian journey length along a road or other PRoW for more than four weeks due to short term closure (managed) of the PRoW	closure of the PRoW without a diversion route for more than four weeks in any 12 month period

Duration

4.7.18 Table 13.10 above sets out the magnitude thresholds for the respective environmental effects considered in this chapter. With the exception of PRoW effects, all effects have a magnitude that does not, initially, consider the duration over which an effect is likely to be experienced.

4.7.19 Duration is considered when assessing the overall significance of residual effects, noting that the DMRB Volume 11 Section 2 Part 5 states in Paragraph 1.47:

'Recognition should be made that permanent impacts will be more significant than those of a temporary nature. For example, the impact may only occur during a single phase of the project construction and may be temporary. Alternatively, the impact may be long-term or irreversible and hence permanent. It is, therefore, important that the assessment distinguishes between permanent and temporary impacts'.

4.7.20 All of the traffic and transport effects associated with the Proposed Development would be temporary effects. Some temporary effects would be likely to last longer than others, and these are clearly reported in Section 9 mitigation and residual effects. Following the quantified assessment, residual effects are reported taking into account professional judgement on the duration over which effects are likely to be experienced.

Significance

4.7.21 Effects are considered to be significant or not significant in EIA terms by judging the relationship between the magnitude of effect of each assessment criteria to be assessed with the sensitivity of each receptor. A Major or Moderate effect is typically considered to be significant. A Minor or Negligible effect is not considered significant. Table 13.11 shows a matrix used to help determine the significance of effects.

Table 13.11: Significance of Effects Matrix

Sensitivity of receptor	Magnitude.			
	High	Medium	Low	Very Low
High	Major– **Significant**	Major– **Significant**	Moderate– **Significant**	Minor– **Not Significant**
Medium	Major– **Significant**	Moderate– **Significant**	Minor– **Not Significant**	Negligible – **Not Significant**
Low	Moderate– **Significant**	Minor– **Not Significant**	Negligible – **Not Significant**	Negligible – **Not Significant**
Very Low	Minor– **Not Significant**	Negligible – **Not Significant**	Negligible – **Not Significant**	Negligible – **Not Significant**

4.7.22 The matrix as presented would reflect permanent effects for all effects other than those related to PRoW, as the other factors of magnitude are also based upon permanent increases in traffic, as set out in table 13.10. However the traffic increases resulting from the Proposed Development are not permanent; as such the significance may only be concluded after applying professional judgement. As well as considering the duration that effects are likely to be experienced over, other factors are taken into consideration when determining the significance of effects in section 9, such as any contingency route designations, and the specific nature of the receptor itself.

4.8 ASSUMPTIONS AND LIMITATIONS

Assumptions

4.8.1 Various assumptions have been made in order to undertake the assessment of the potential environmental effects associated with traffic movements that

could be realised as a consequence of the Proposed Development. Some of these assumptions have been made to add robustness to the assessment. The following assumptions are used in the assessment:

- an overall link based sensitivity has been applied to each link based upon the number of built environment indicators present;
- the maximum number of potential vehicle movements is assigned to each highway link regardless of tunnelling scenario i.e. tunnel launch site or method of tunnelling.
- the assessment considers all vehicles with a weight in excess of 3.5 tonne as HGVs.
- all vehicles movements quoted are assumed to be two-way.
- all construction traffic is assumed to originate from the Strategic Road Network (A55), rather than originating locally.

Limitations

4.8.2 The following limitations apply to the assessment; these limitations do not compromise the robustness of the assessment:

- precise origin/destination of construction vehicles is not confirmed. However, all vehicles are anticipated to route from the A55 and then onto the LRN so the effects on the LRN are likely to represent a the worst case assessment;
- the study area is limited to the road network between Jct 3 and Jct 11 of the A55 (see section 6); and
- traffic figures do not include traffic related to the third party works, however as the number of vehicle movements is likely to be very small and the number of HGV movements limited, it is not considered that the addition of these vehicles would change the findings of the assessment.

5 Basis of Assessment

5.1 INTRODUCTION

5.1.1 The basis of assessment section sets out the assumptions that have been made in respect of the design flexibility maintained within the draft DCO, and the consideration that has been given to alternative scenarios and the sensitivity of the assessment to changes in the construction commencement year and duration.

5.1.2 Details of the available flexibility are included in Chapter 3 Description of Proposed Development (**Document 5.3**), Chapter 4 Construction, Operation, Maintenance and Decommissioning (**Document 5.4**) and are also considered in Chapter 6 EIA Methodology (**Document 5.6**).

5.1.3 This traffic and transport assessment has used a reasonable worst-case scenario in terms of the allocation of construction traffic to the highway network in the study area, and also undertaken a two stage assessment which is outlined later in this section.

Operational and Maintenance Effects

5.1.4 The actual operation of the Proposed Development (i.e. its physical presence, and use for conducting electricity) would generate no traffic; however routine inspections, servicing and maintenance would be required.

5.1.5 The OHLs, tunnel and THH and CSEC and substations would have routine inspection, servicing and maintenance needs. The volumes of traffic generated by such routine activities would be inconsequential, and always at lower levels than during the peak of construction activity.

5.1.6 Non routine refurbishment work would be likely to be of a larger scale than routine maintenance and servicing. For example, reconductoring work could require the re-establishment of access tracks, scaffolding at road crossings etc. The levels of traffic generated by non-routine refurbishment would typically be much lower, more localised and of shorter duration than those predicted for the construction stage. In addition, the traffic related to tunnel construction would never recur. The effects are likely to be of a lower

significance than those of the construction stage, and as such this chapter does not assess refurbishment traffic.

5.1.7 Further specific details of operational and maintenance requirements and the preferred routeing arrangements for such activities is included within the TA (**Document 5.13.1.2**).

5.2 FLEXIBILITY ASSUMPTIONS

5.2.1 For most topics the main assessment has been undertaken based upon the design shown on the Works Plans (**Document 4.4**), the Construction Plans (**Documents 5.4.1.1** and **5.4.1.2**) and the Design Plans (**Document 4.13**). To take account of the flexibility allowed for in the DCO, consideration has been given to the potential for effects to be of greater significance should any of the permanent or temporary infrastructure elements be moved within the Limits of Deviation (LOD) or Order Limits.

5.2.2 The assumptions made regarding the use of flexibility are set out in Table 13.12.

Table 13.12 Flexibility assumptions

Element of flexibility	Proposed Development assumption for initial assessment	Flexibility assumptions considered
Horizontal Limits of Deviation for pylons and conductors	No assumptions need to be made as neither the location of the pylons nor conductors is relevant to this assessment.	Precise location of the pylons nor conductors does not influence the assessment of peak week/year activity.
Vertical Limits of Deviation for pylons.	Assessed at the height shown in Appendix 3.1 Indicative Pylon Schedule (**Document 5.3.2.1**)	Height of pylons does not influence the number of construction vehicles required.
Pylon footprint	No assumptions have had to be made, as the size of the pylon footprint is not relevant to this assessment	N/A
Pylon foundation type	No assumptions were required as the type of foundation used is unlikely to change the traffic	N/A

Table 13.12 Flexibility assumptions		
Element of flexibility	Proposed Development assumption for initial assessment	Flexibility assumptions considered
	numbers to a degree that the effects would be different.	
Tunnel alignment within below ground LOD	The assessment is based upon the indicative alignment, and the traffic numbers are based upon the quantity of rock excavated for this alignment.	No additional assumptions have been assessed as the indicative alignment represents the longest tunnel alignment likely within the LOD.
Tunnel depth	Shaft/tunnel depths assessed at the depths described in Chapter 3 Description of Proposed Development (**Document 5.3**)	No additional assumptions have needed to be assessed as it is considered highly unlikely that shafts or tunnel gradients leading to a substantially greater depth would be used, as deeper shafts/tunnel than necessary would add engineering operational complexity and cost.
Tunnel construction compounds	No assumptions necessary as the extent of use made of the total compound area identified is not a factor that would affect the traffic assessment.	N/A
Braint and Tŷ Fodol THH and CSEC/and Pentir Substation	The extent of use made of the maximum parameters shown on Design Plans (**Document 4.13**) is not a factor that would affect the traffic assessment and no assumptions have therefore been necessary.	N/A
Access tracks and working areas	Effects resulting from the use of access tracks are not	Minor amendments to the access tracks within the order

Table 13.12 Flexibility assumptions		
Element of flexibility	Proposed Development assumption for initial assessment	Flexibility assumptions considered
	considered within this chapter and no assumptions have therefore had to be made. Although changes to access tracks within the LOD could lead to small increases or decreases in the quantities of stone delivered to site, it is considered that the access tracks as shown on the Works plans represent a reasonable case for assessment.	limits would not influence the assessment of peak week/year activity
Penmynydd Road Compound	No assumptions required as the extent of use made of the total compound area identified is not a factor that would affect the traffic assessment.	N/A
Pentir Construction Compound	No assumptions required as the extent of use made of the total compound area identified is not a factor that would affect the traffic assessment.	N/A
Third Party Services	No assumptions have been made. The traffic figures do not include traffic related to the third party works, however as the number of vehicle movements is likely to be very small and the number of HGV movement limited, it is not considered that the addition of these vehicles would change the findings of the assessment	N/A

5.3 CONSIDERATION OF SCENARIOS

5.3.1 Three sets of scenarios have been considered by the assessment; these are:

- Option A and B, as explained in Chapter 3 Description of the Proposed Development (**Document 5.3**);
- Direction and method of tunnelling (Scenarios 1 and 2 and 3) as explained in Chapter 4 Construction, Operation, Maintenance and Decommissioning (**Document 5.4**); and
- Construction traffic using the existing A5025 (Link 1) alignment or using the new alignment as proposed by Horizon Nuclear Power and as explained in Chapter 4 Construction, Operation, Maintenance and Decommissioning (**Document 5.4**).

5.3.2 Table 13.13 details where these options are relevant to the traffic and transport assessment and how they have been assessed in Section 9 mitigation and residual effects.

Table 13.13: Consideration of Scenarios

Option	How it has been considered within the assessment
Option A and B	The difference between Option A and Option B are immaterial in terms of the number of construction vehicles on the highway network or any changes to the duration of the construction programme. As a result, the assessment of potential and residual effects is equally applicable to both Option A and Option B.
Direction and method of tunnelling (Scenarios 1,2 and 3)	The assessment in this chapter considers both possible tunnel directions, and a drill and blast scenario. The assessment is considered on a link by link basis and, as a result, links that would be affected differently, depending on tunnel direction, are always reported against the 'worst case' for their individual link. Scenario 3, adopting a drill and blast method, would require excavation of tunnel material at both ends, with the majority being extracted from Braint. Should the traffic levels on a given link under Scenario 3 exceed those that would be generated by either Scenario 1 or 2, the flows from Scenario 3 have been considered. Whilst it is not possible for

Table 13.13: Consideration of Scenarios	
Option	How it has been considered within the assessment
	worst case effects to occur simultaneously on links affected by the tunnel direction, the potential residual effects are reported for each link individually, and so this does not influence the findings of the assessment.
Construction traffic using the existing A5025 (Link 1) alignment or using the new alignment as proposed by Horizon Nuclear Power	The assessment is based upon the existing alignment of the A5025, as this represents the worst case because the new alignment will reduce the impact on BEIs on the current route. Screening has been undertaken of the effect of the completion of the A5025 offline works in advance of construction of the Proposed Development on receptors along this route, and it is considered that the sensitivity of the link will remain consistent with, or potentially reduce from that associated with the current route alignment.

5.4 SENSITIVITY TESTS

Construction Start Date

5.4.1 Under the terms of the draft DCO (**Document 2.1**), construction could commence in any year up to five years after the grant of a DCO. Consideration has been given to whether mitigation or residual effects reported in this chapter would be any different if construction were to commence in any year up to and including this fifth year.

5.4.2 Background traffic growth is likely to increase year on year up to and including the final year when construction could commence and therefore baseline traffic conditions are anticipated to increase as time progresses. Increased baseline traffic conditions would be less sensitive to increases in construction traffic and would be reflected by smaller proportional increases, subject to there being available capacity on the links in question, an factor that is assessed in the Transport Assessment (**Document 5.13.2.1**).. Therefore the residual effects reported in Section 9 might not be realised (as a result of the Proposed Development) and the assessment is considered to reflect a worst case scenario.

5.4.3 It has therefore not been necessary to undertake a more detailed assessment of an alternative programme to that set out in Chapter 4 Construction,

Operation, Maintenance and Decommissioning (**Document 5.4**), as, regardless of the commencement date, the effects of the Proposed Development would be no greater.

Duration of Construction Activities

5.4.4 It is considered that there is some potential for the traffic and transport assessment to be sensitive to changes in the duration of activities or the construction programme as a whole, and this sensitivity is considered further in the comments column within assessment tables in section 9 Mitigation and Residual Effects.

6 Study Area

6.1 INTRODUCTION

6.1.1 The study area for the Proposed Development has been updated since publication of the Scoping Report and the PEIR, due to the evolution of the Proposed Development as well as through engagement with stakeholders.

6.2 SPATIAL EXTENT OF ASSESSMENT

6.2.1 In terms of the spatial extent of the assessment, the local traffic and transport network that has the potential to be affected by the Proposed Development covers major (A Roads), minor (B Roads and C Roads) and unnamed roads (UR) (unclassified) forming the road network local to the Proposed Development. Unnamed Roads are shown in Figure 13.7 (**Document 5.13.1.7**).

6.2.2 For this assessment the study area is defined by identifying the links that construction traffic would be required to use in order to access the Proposed Development. The most appropriate routes for vehicles to access and egress the Proposed Development have been identified and are listed in Table 13.14, considering their likely origins and destination points, the type of vehicles concerned and the elements of the proposed development concerned. This list has changed since the PEIR as a consequence of further investigation into suitable routes, as well as feedback from stakeholders. This approach is consistent with that outlined in Paragraph 3.10 of the SoS's Scoping Opinion.

6.2.3 A separate scope of assessment for the TA has been discussed with the relevant highway authorities and is contained within Annex A of the TA report (**Document 5.13.2.1**).

6.2.4 Figure 13.2 (**Document 5.13.1.2**) presents the construction traffic routes and Figure 13.3 Sheets 1 to 6 (**Document 5.13.1.3**) present proposed temporary access points to the temporary working areas for the Proposed Development. Descriptions of the construction traffic routes are provided in Table 13.14 below.

Table 13.14: Highway Link Description for LGV/HGV/AIL Construction Traffic Routes					
Link Reference	Highway Link	Description	HGV/ LGV/ AIL	Proposed Development Element	Key Settlement
1	A5025	A5025 between A5 at Valley Crossroads and Wylfa.	HGV	23 New Pylons and Wylfa Substation.	Llanfachraeth
2	A5	A5 between A55 J3 and Valley Crossroads.	HGV	Access to the A5025.	Valley
3	UR 4	UR 4 between B5111 and B2	HGV	13 New Pylons.	Rhosybol
4	B5111	B5111 between B5110 and B5112	HGV	33 New Pylons.	Llangefni and Llanerchymedd
4.1	B5111	B5111 between the B5112 and access B8	HGV	33 New Pylons.	Llanerchymedd and Rhosybol
5	B5110	B5110 between Llangefni and access C8.	HGV	20 New Pylons.	Llangefni
6	B5420	B5420 between LLR and B5110	HGV	Access to B5110 and B5111.	Llangefni
7	B5420	Between Llangefni Link Road and Access D4	HGV	9 New Pylons and OHL Penmynydd Road Construction Compound.	Llangefni

Table 13.14: Highway Link Description for LGV/HGV/AIL Construction Traffic Routes

Link Reference	Highway Link	Description	HGV/ LGV/ AIL	Proposed Development Element	Key Settlement
7.1	B5420	Between Access D4 and Crosses Roundabout.	HGV	9 New Pylons and Penmynydd Road Construction Compound.	Llangefni
8	A5114	Between A55 J6 Llangefni Link Road.	HGV	Access to Llangefni Link Road.	Llangefni
8.1	Industrial Estate Road	Between A5114 via existing carriageway to Llangefni Link Road	HGV	Access to Llangefni Link Road, B5420, B5110 and B5111.	Llangefni
8.2	Llangefni Link Road (LLR)	LLR between Llangefni Industrial Estate and the B5420.	HGV	Access to B5420, B5110 and B5111.	Llangefni
9	A5025	A5025 between A55 J8 to B5420.	HGV	9 New Pylons and OHL Penmynydd Road Construction Compound.	Llanfairpwll and Menai Bridge
11	UR 21	Unnamed Road between Star and access E5.	HGV	8 New Pylons.	Star
11.1	UR 21	UR between Star Crossroads	HGV	8 New Pylons.	Star

Table 13.14: Highway Link Description for LGV/HGV/AIL Construction Traffic Routes					
Link Reference	Highway Link	Description	HGV/ LGV/ AIL	Proposed Development Element	Key Settlement
		and Unnamed Road Star			
12	A5152	Between A55 J7 and A5.	HGV	Access to A5 and access E5A.	Gaerwen
13	A5	A5 between A5152 and A55 J7a.	HGV	Access to Pont Ronwy Link, NCR 8 and UR 21.	Star
14	NCR8	Between A5 and access E7	HGV	5 New Pylons, Braint THH and CSEC.	Star
15	Pont Ronwy Link (PRL)	PRL between A5 and access F1	HGV	5 New Pylons, Braint THH and CSEC.	n/a
16	A4080	A4080 between A5 at tollgate and F2.	HGV/ AIL	AIL route to Braint THH and CSEC	Llanfairpwll
17	A5	A5 Between A55 J8a and A4080	HGV/ AIL	Access to A4080.	Llanfairpwll
18	A487	A487 Between B4547 and A55 J9.	HGV	3 New Pylons, Tŷ Fodol THH, CSEC and Pentir Substation.	Faenol
18.1	A4087	A4087 Between A55 J10 and A487	HGV	3 New Pylons, Tŷ Fodol THH and CSEC and Pentir Substation.	Faenol

Table 13.14: Highway Link Description for LGV/HGV/AIL Construction Traffic Routes					
Link Reference	Highway Link	Description	HGV/ LGV/ AIL	Proposed Development Element	Key Settlement
19	B4547	B4547 between A4244 and A487	HGV/ AIL	3 New Pylons, Tŷ Fodol THH and CSEC and Pentir Substation and Pentir Construction Compound.	Pentir
20	A4244	A4244/A5 between B4547 And A55 J11	HGV/ AIL	Primary HGV and AIL route between the A55 and B4547.	Pentir
21	A55	Britannia Bridge between A55 J9 and A55 J8a	HGV/ AIL	Link of strategic importance and access to proposed project elements on Anglesey and Gwynedd.	n/a
22	B5109	B5109 between LLR and access D2	LGV	Alternative LGV access route to OHL.	Talwrn
23	Ffordd y Felin	Ffordd y Felin between A5025 and Brynddu Road	LGV	Alternative LGV access route to OHL.	Tregele
24	B5110	B5110 between access C8 and UR 19	LGV	Alternative LGV access route to OHL.	Cefniwrch

Table 13.14: Highway Link Description for LGV/HGV/AIL Construction Traffic Routes

Link Reference	Highway Link	Description	HGV/ LGV/ AIL	Proposed Development Element	Key Settlement
25	Brynddu Road	Brynddu Road Between Ffordd y Felin and access B2	LGV	Alternative LGV access route to OHL.	Llanfechell
26	B5112	B5112 between A55 J5 and B5111	LGV	Alternative LGV route access to B5111.	Llanerchymedd
27	UR 1	UR 1 between Brynddu Road and UR 4	LGV	Alternative LGV access route to OHL.	Rhosgoch
28	UR 8	UR8 between B5111 and access B11	LGV	Alternative LGV access route to OHL.	n/a
29	UR 9	UR9 between B5111 and access C2	LGV	Alternative LGV access route to OHL.	Llanerchymedd & Maeneddwyn
30	Fodolydd Lane	Fodolydd Lane between B4547 and access F3	LGV	Alternative LGV access route to Tŷ Fodol THH and CSEC and OHL.	n/a
31	UR 10	UR10 between B5111 and access C4	LGV	Alternative LGV access route to OHL.	Capel Coch
32	UR 16	UR 16 between B5420 and access E1	LGV	Alternative LGV access route to OHL.	Ceint

Table 13.14: Highway Link Description for LGV/HGV/AIL Construction Traffic Routes

Link Reference	Highway Link	Description	HGV/ LGV/ AIL	Proposed Development Element	Key Settlement
33	UR 19	UR 19 between B5110 and access C6	LGV	Alternative LGV access route to OHL.	Cefniwrch
34	Fodolydd Lane	Fodolydd Lane between B4547 and access F7 (enabling works only)	HGV	Access for bridge construction during enabling works.	Pentir
35	UR 3	UR 3 between Brynddu Road and access A9	LGV	Alternative LGV access route to OHL.	Llanfechell
36	North of J7	North of J7 between A55 and access E5A	HGV	8 New Pylons.	Gaerwen

6.3 CONSIDERATION OF THE A55

6.3.1 The A55 is a high capacity link on the Strategic Road Network and it is not anticipated that the Proposed Development would have the potential to have any significant effect on it or its users using the methodology outlined in Chapter 4. However, given its strategic importance, the A55 Britannia Bridge is included within the assessment of effects. Selected assessment of the A55 and key junctions along the route is included within the TA (**Document 5.13.2.1**) as discussed with Welsh Government.

6.4 NON-HIGHWAY FEATURES INCLUDED IN THE STUDY AREA

6.4.1 Whilst construction traffic routes are the most notable components of the study area for traffic and transport, included within the study area is the North Wales Mainline railway and a number of PRoW that are intersected by the Proposed Development or its construction traffic routes. Whilst the Proposed

Development would not explicitly seek to transport materials via rail, some of the highway links referred to in Table 13.14 intersect with the railway in the form of overbridges.

6.4.2 Where PRoW would be crossed by the Proposed Development or where they are considered to be a potential receptor of traffic and transport effects, they are considered in Section 9 mitigation and residual effects.

6.4.3 Table 13.15 below shows a long list of PRoW and National Cycle Network (NCN) Routes that have the potential to be affected by the Proposed Development, either by physical development or by proximity to construction traffic routes.

Table 13.15: Chapter 3 PRoW Long List

PRoW Ref	Nearest highway Links	Link Ref	Relevant Proposed Project Element
Wales Coast Path between 20/057/1 and 38/034A/2	UNR 23	1	OHL Works
20/038/1	UNR 23	1	OHL Works
20/029/1	UNR 23	1	OHL Works
20/030/2	UNR 23	1	OHL Works
20/032/1	Ffordd Y Felin	23	OHL Works
20/054/1	Brynddu Road	25	OHL Works
38/015/2	Brynddu Road	25	OHL Works
38/016/1	Brynddu Road	25	OHL Works
38/072/1	Brynddu Road	25	OHL Works
38/065/4	Brynddu Road	25	OHL Works
38/067/2	Brynddu Road	25	OHL Works
38/085/1	Brynddu Road	25	OHL Works
44/031/1	UNR 4	2	OHL Works

Table 13.15: Chapter 3 PRoW Long List			
PRoW Ref	Nearest highway Links	Link Ref	Relevant Proposed Project Element
44/027/1	UNR 4	2	OHL Works
44/023/1	UNR 4	2	OHL Works
44/051/1	UNR 7	28	OHL Works
44/056/2	UNR 7	28	OHL Works
44/057/1	Lon Leidr	N/A	OHL Works
44/058/2	UNR 9	29	OHL Works
23/030/1	B5110	24	OHL Works
23/030/2	B5110	24	OHL Works
23/031/1	B5110	24	OHL Works
23/016/1	UNR 14	N/A	OHL Works
23/017/1	UNR 14	N/A	OHL Works
23/020/2	B5109	22	OHL Works
23/019/2	B5109	22	OHL Works
23/020/1	B5109	22	OHL Works
33/022/1	UNR 16	32	OHL Works
33/020/1	UNR 17	36.1	OHL Works
33/006/2	UNR 17	36.1	OHL Works
21/009/1	Llanddaniel Road	14	OHL Works
21/010/1 (Wales Coast Path)	A4080	16	LGV/HGV Enabling Works Route
PROW Pentir Rhif 14 (16678)	Fodolydd Lane	34	OHL Works

Table 13.15: Chapter 3 PRoW Long List			
PRoW Ref	Nearest highway Links	Link Ref	Relevant Proposed Project Element
PROW Pentir Rhif 17 (16680)	Fodolydd Lane	34	Order Limits only
NCR 566	A5025	1	LGV/HGV Route
NCR 566	A5	2	LGV/HGV Route
NCR 566	UNR 8	28	LGV Route
NCR 566	B5111	4.1	LGV Route
NCR 566	B5420	7	LGV Route
NCR 5	B5110	5	LGV Route
NCR 5	B5420	6	LGV Route
NCR 566	Industrial Estate Road	8.1	LGV/HGV Route
NCR 8	A5025	9	Emergency/Contingency Route
NCR 8	A5	11	LGV/HGV Route
NCR 8	A5	11.1	LGV/HGV Route
NCR 8	A5	13	LGV/HGV Route
NCR 8	Llanddaniel Rd.	14	LGV/HGV Route
Wales Coast Path	A5	17	LGV/HGV Enabling Works Route
Wales Coast Path	A487	18	LGV/HGV Route
Pentir Rhif 111	B4547	19	LGV/HGV Route
Pentir Rhif 111	A4244	20	LGV/HGV Route
Pentir Rhif 111	A55	21	LGV/HGV Route

7 Baseline Conditions

7.1 INTRODUCTION

7.1.1 The baseline traffic and transport conditions for the study area, as defined in Section 6 study area, are set out within this section.

7.2 BASELINE TRAFFIC COUNT DATA

7.2.1 As described in Section 5 basis of assessment, traffic count data has been collated for the construction traffic routes listed in Table 13.14 and illustrated on Figure 13.2 (**Document 5.13.1.2**) the Link Refs relate to those illustrated on Figure 13.8 (**Document 5.13.1.8**). Data has been sourced for at least seven days and has been converted into Average Annual Daily Traffic (AADT) for total traffic flow and HGV movements. The figures quoted in Table 13.16 relate to two-way traffic volumes.

Table 13.16: 2016 Baseline Traffic Conditions

Link Reference	Highway Link	24 Hour AADT total	24 hour AADT HGVs	Weekly two-way total traffic movements	Weekly two-way HGV movements	% HGV
1	A5025	2,483	165	17,378	1,152	7%
2	A5	7,001	411	49,005	2,878	6%
3	Unnamed Road (UR) 4	757	58	5,299	409	8%
4	B5111	3,073	133	21,511	931	4%

Table 13.16: 2016 Baseline Traffic Conditions						
Link Reference	Highway Link	24 Hour AADT total	24 hour AADT HGVs	Weekly two-way total traffic movements	Weekly two-way HGV movements	% HGV
4.1	B5111	3,375	181	23,628	1,269	5%
5	B5110	2,534	136	17,735	950	5%
6	B5420	9,006	354	63,042	2,478	4%
7	B5420	1,979	78	13,856	546	4%
7.1	B5420a	1,979	78	13,856	546	4%
8	A5114	13,517	735	94,618	5,143	5%
8.1	Industrial Estate Road	6,285	269	43,997	1,883	4%
8.2	LLR	6,367	318	44,567	2,228	5%
9	A5025	11,220	522	78,537	3,652	5%
11	Unnamed Road 21	624	28	4,368	193	4%
11.1	Unnamed Road 21	624	28	4,368	193	4%

Table 13.16: 2016 Baseline Traffic Conditions						
Link Reference	Highway Link	24 Hour AADT total	24 hour AADT HGVs	Weekly two-way total traffic movements	Weekly two-way HGV movements	% HGV
12	A5152	4,843	446	33,901	3,121	9%
13	A5	4,297	233	30,079	1,633	5%
14	NCR8	1,048	76	7,335	529	7%
15	Pont Rhonwy Link (PRL)	440	20	3,082	137	4%
16	A4080	4,270	141	29,888	986	3%
17	A5	9,158	409	64,109	2,862	4%
18	A487	17,626	1,142	123,385	7,996	6%
18.1	A4087	10,640	323	74,480	2,261	3%
19	B4547	5,687	200	39,811	1,399	4%
20	A4244	7,547	495	52,830	3,462	7%
21	A55	29,894	1,696	209,255	11,873	6%
22	B5109	1,644	68	11,507	473	4%

Table 13.16: 2016 Baseline Traffic Conditions						
Link Reference	Highway Link	24 Hour AADT total	24 hour AADT HGVs	Weekly two-way total traffic movements	Weekly two-way HGV movements	% HGV
23	Ffordd y Felin	1,020	34	7,141	240	3%
24	B5110	2,534	136	17,735	950	5%
25	Brynddu Road	388	19	2,718	136	5%
26	B5112	1,217	57	8,520	402	5%
27	UR 1	81	-	566	-	0%
28	UR 8	473	-	3,311	-	0%
29	UR 9	601	50	4,205	350	8%
30	Fodolydd Lane	37	-	261	-	0%
31	UR 10	712	44	4,983	311	6%
32	UR 16	423	28	2,961	196	7%
33	UR 19	80	-	563	-	0%

Table 13.16: 2016 Baseline Traffic Conditions						
Link Reference	Highway Link	24 Hour AADT total	24 hour AADT HGVs	Weekly two-way total traffic movements	Weekly two-way HGV movements	% HGV
34	Fodolydd Lane	46	-	322	-	0%
35	UR 3	85	-	595	-	0%
36	North of J7	127	9	888	60	7%

7.3 A55 TRAFFIC COUNT DATA

7.3.1 Table 13.16 above only includes the A55 Britannia Bridge as this is the only part of the A55 being assessed within this chapter.

7.4 SENSITIVITY OF HIGHWAY LINKS FOR ASSESSMENT

7.4.1 Table 13.17 provides a summary of the review of built environment indicators located along each link justifying the assumed link sensitivity taken forward for assessment in Section 9 mitigation and residual effects.

Table 13.17: Sensitivity of Highway Links for Assessment						
Link Ref	Link	Description	Link Sensitivity	Built Environment Indicators	Contingency HGV Route	Comment
1	A5025	A5025 between A5 at Valley Crossroads and Wylfa.	Medium	1 School (Ysgol Gynradd Llanfachraeth) and a number of residential properties fronting onto the carriageway in local settlements e.g. Llanfachraeth and Llanynghenedl.	No	N/A
2	A5	A5 between A55 J3 and Valley Crossroads.	Low	Minimal Built Environment Indicators	No	N/A
3	Unnamed Road (UR) 4	UR 4 between B5111 and B2	Medium	Public Rights of Way adjoining link (44/023/1 and 44/027/1).	No	N/A
4	B5111	B5111 between B5110 and B5112	Medium	1 Playground and a number of properties with direct frontage to the highway.	No	N/A
4.1	B5111	B5111 between the	Medium	1 School (Ysgol Gymuned Llanerchymedd). A number of properties with direct frontage	No	N/A

Table 13.17: Sensitivity of Highway Links for Assessment

Link Ref	Link	Description	Link Sensitivity	Built Environment Indicators	Contingency HGV Route	Comment
		B5112 and access B8		to the highway. On road NCRs 5 and 566 located along link.		
5	B5110	B5110 between Llangefni and access C8.	Medium	Residential properties fronting link in Llangefni. NCR 5 located along link. Footways and PRoW 34/038/1 adjoining link.	No	N/A
6	B5420	B5420 between LLR and B5110	Medium	1 School (Coleg Menai Llangefni) located on link.	No	N/A
7	B5420	Between Llangefni Link Road and Access D4	Medium	Frontage properties, footways and PRoW adjoining link (34/011/1 and 34/008/1).	No	N/A
7.1	B5420a	Between Access D4 and Crosses	Medium	Pili Palas Nature World located along link. A Number of PRoW adjoining the link.	Yes	Contingency route for OHL traffic. Preferred route via

Table 13.17: Sensitivity of Highway Links for Assessment						
Link Ref	Link	Description	Link Sensitivity	Built Environment Indicators	Contingency HGV Route	Comment
		Roundabout.				the LLR and B5420 west.
8	A5114	Between A55 J6 Llangefni Link Road.	Low	Minimal Built Environment Indicators	No	N/A
8.1	Industrial Estate Road	Between A5114 via existing carriageway to Llangefni Link Road	Medium	Footways alongside carriageway and residential properties fronting the carriageway.	No	N/A
8.2	LLR	LLR between Llangefni Industrial Estate and the B5420.	Low	Minimal Built Environment Indicators	No	N/A
9	A5025	A5025 between	Low	1 Retirement Home (Saint Tysillo Nursing Home) adjacent to A5025. This property is	Yes	Contingency route for OHL traffic.

Table 13.17: Sensitivity of Highway Links for Assessment						
Link Ref	Link	Description	Link Sensitivity	Built Environment Indicators	Contingency HGV Route	Comment
		A55 J8 to B5420.		not directly accessed from Link Ref 9 and is accessed via a local road which is not designated as a construction traffic route.		Preferred route via the LLR and B5420 west.
11	Unnamed Road 21	Unnamed Road between Star and access E5.	Medium	NCR 8 Located along link.	Yes	Contingency route for OHL traffic. Preferred route via A55 J7 and access E5a.
11.1	Unnamed Road 21	UR between Star Crossroads and Unnamed Road Star	Low	Minimal Built Environment Indicators	Yes	Contingency route for OHL traffic. Preferred route via A55 J7 and access E5a.
12	A5152	Between A55 J7 and A5.	Low	Minimal Built Environment Indicators	No	N/A
13	A5	A5 between A5152 and A55 J7a.	Low	Minimal Built Environment Indicators	No	N/A

Table 13.17: Sensitivity of Highway Links for Assessment						
Link Ref	Link	Description	Link Sensitivity	Built Environment Indicators	Contingency HGV Route	Comment
14	NCR8	Between A5 and access E7	Medium	NCR 8 located along link and residential properties directly fronting carriageway.	Yes	Primary OHL Route for two Pylons. Contingency route for Tunnel Traffic and Pylons.
15	Pont Rhonwy Link (PRL)	PRL between A5 and access F1	Low	Minimal Built Environment Indicators	No	N/A
16	A4080	A4080 between A5 at tollgate and F2.	Medium	Properties with direct frontage along the link and a number of PRoWs including Anglesey and Wales Coast Path	Yes	Primary AIL route to Braint THH and CSEC. Contingency route for general tunnelling traffic.
17	A5	A5 Between A55 J8a and A4080	Medium	Footways located predominantly on one side of carriageway between J8A and A4080.	Yes	Primary AIL route to Braint THH and CSEC. Contingency route

Table 13.17: Sensitivity of Highway Links for Assessment						
Link Ref	Link	Description	Link Sensitivity	Built Environment Indicators	Contingency HGV Route	Comment
						for general tunnelling traffic.
18	A487	A487 Between B4547 and A55 J9.	Low	Minimal Built Environment Indicators	No	N/A
18.1	A4087	A4087 Between A55 J10 and A487	Low	Minimal Built Environment Indicators	Yes	Contingency Route to Tŷ Fodol THH and CSEC and Substation if A5, A4244, B4547 or A487 are unavailable.
19	B4547	B4547 between A4244 and A487.	Low	Minimal Built Environment Indicators	No	N/A
20	A4244	A4244/A5 between	Medium	Bangor service station and hotel located along A4244 near to junction with A5, in addition to a number of residential	No	N/A

Table 13.17: Sensitivity of Highway Links for Assessment

Link Ref	Link	Description	Link Sensitivity	Built Environment Indicators	Contingency HGV Route	Comment
		B4547 And A55 J11		properties with direct frontage onto the highway link		
21	A55	Britannia Bridge between A55 J9 and A55 J8a	Low	Minimal Built Environment Indicators	No	N/A
22	B5109	B5109 between LLR and access D2	High	1 school (Ysgol Y Graig), 1 nursery (Meithrinfa Medra) and one college (Coleg Menai) can be accessed from this link, however only the school has a direct frontage. The link has been recently opened and is constructed to the same specification as Link Ref 8.2 LLR, with segregated cycle paths and footways which would mitigate any potential pedestrian amenity and delay effects.	LGV Only	N/A
23	Ffordd y Felin	Ffordd y Felin between	Medium	1 School (Ysgol Gynradd Camaes) is located adjacent to Ffordd Y Felin.	LGV Only	N/A

Table 13.17: Sensitivity of Highway Links for Assessment						
Link Ref	Link	Description	Link Sensitivity	Built Environment Indicators	Contingency HGV Route	Comment
		A5025 and Brynddu Road				
24	B5110	B5110 between access C8 and UR 19	Medium	Local on road cycle route located along UR19. PRoW 23/030/1 adjoins link.	LGV Only	N/A
25	Brynddu Road	Brynddu Road Between Fordd y Felin and access B2	Low	Minimal Built Environment Indicators	LGV Only	N/A
26	B5112	B5112 between A55 J5 and B5111	Medium	Footways and residential properties fronting the link along western approach to Llanerchymedd.	LGV Only	N/A
27	UR 1	UR 1 between Brynddu	Medium	A number of residential properties in addition to a Public House and Cae Ffynnon camping and caravanning site fronting UR 1.	LGV Only	N/A

Table 13.17: Sensitivity of Highway Links for Assessment						
Link Ref	Link	Description	Link Sensitivity	Built Environment Indicators	Contingency HGV Route	Comment
		Road and UR 4				
28	UR 8	UR8 between B5111 and access B11	Medium	On road NCR 566 located along this link. PRoWs including 25/002/2 adjoining the link.	LGV Only	N/A
29	UR 9	UR9 between B5111 and access C2	Medium	NCR 5 and a number of residential properties with direct frontage along this link.	LGV Only	N/A
30	Fodolydd Lane	Fodolydd Lane between B4547 and access F3	Low	Minimal Built Environment Indicators	LGV Only	N/A
31	UR 10	UR10 between B5111 and access C4	Medium	On-road section of NCR 5 located along this link. Eglwys St Caean's Church and residential properties with frontage on UR 10.	LGV Only	N/A

Table 13.17: Sensitivity of Highway Links for Assessment

Link Ref	Link	Description	Link Sensitivity	Built Environment Indicators	Contingency HGV Route	Comment
32	UR 16	UR 16 between B5420 and access E1	Low	Minimal Built Environment Indicators	LGV Only	N/A
33	UR 19	UR 19 between B5110 and access C6	Medium	On-road section of NCR 5 located along this link.	LGV Only	N/A
34	Fodolydd Lane	Fodolydd Lane between B4547 and access F7 (enabling works only)	Low	Minimal Built Environment Indicators	No	N/A
35	UR 3	UR 3 between Brynddu Road and access A9	Low	Minimal Built Environment Indicators	LGV Only	N/A

Table 13.17: Sensitivity of Highway Links for Assessment						
Link Ref	Link	Description	Link Sensitivity	Built Environment Indicators	Contingency HGV Route	Comment
36	North of J7	North of J7 between A55 and access E5A	Low	Minimal Built Environment Indicators	HGV	N/A

7.5 SENSITIVITY OF PROW FOR ASSESSMENT

7.5.1 Table 13.18 below sets out the sensitivity of PRoWs considered within the assessment. A PRoW is considered in this assessment if it is located within the Order Limits, or if it connects to a proposed construction traffic route. These PRoWs are also illustrated in Figure 13.6 (**Document 5.13.1.6**).

7.5.2 PRoW and NCN routes have been assigned a sensitivity rating of 'low', 'medium' or 'high'. The sensitivity ratings have been assigned based on considering condition, documented popularity, national designation, on-site observations, accessibility, and discussions with the PRoW officers at IACC and Gwynedd Council.

Table 13.18: PRoW Sensitivity

PRoW Ref	Nearest highway Links	Link Ref	Relevant Proposed Project Element	Sensitivity
Wales Coast Path permitted route between 20/057/1 and 38/034A/2	UNR 23	1	OHL Works	High
20/038/1	UNR 23	1	OHL Works	Low
20/029/1	UNR 23	1	OHL Works	Low
20/030/2	UNR 23	1	OHL Works	Low
20/032/1	Ffordd Y Felin	23	OHL Works	Low
20/054/1	Brynddu Road	25	OHL Works	Low
38/015/2	Brynddu Road	25	OHL Works	Low
38/016/1	Brynddu Road	25	OHL Works	Low
38/072/1	Brynddu Road	25	OHL Works	Low
38/065/4	Brynddu Road	25	OHL Works	Low
38/067/2	Brynddu Road	25	OHL Works	Low
38/085/1	Brynddu Road	25	OHL Works	Low

Table 13.18: PRoW Sensitivity				
PRoW Ref	Nearest highway Links	Link Ref	Relevant Proposed Project Element	Sensitivity
44/031/1	UNR 4	2	OHL Works	Low
44/027/1	UNR 4	2	OHL Works	Low
44/023/1	UNR 4	2	OHL Works	Low
44/051/1	UNR 7	28	OHL Works	Low
44/056/2	UNR 7	28	OHL Works	Low
44/057/1	Lon Leidr	N/A	OHL Works	Low
44/058/2	UNR 9	29	OHL Works	Low
23/030/1	B5110	24	OHL Works	Low
23/030/2	B5110	24	OHL Works	Low
23/031/1	B5110	24	OHL Works	Low
23/016/1	UNR 14	N/A	OHL Works	Low
23/017/1	UNR 14	N/A	OHL Works	Low
23/020/2	B5109	22	OHL Works	Low
23/019/2	B5109	22	OHL Works	Low
23/020/1	B5109	22	OHL Works	Low
33/022/1	UNR 16	32	OHL Works	Low
33/020/1	UNR 17	36.1	OHL Works	Low
33/006/2	UNR 17	36.1	OHL Works	Low
21/009/1	Llanddaniel Road	14	OHL Works	Low
21/010/1 (Wales Coast Path)	A4080	16	LGV/HGV Enabling Works Route	High
PROW Pentir Rhif 14 (16678)	Fodolydd Lane	34	OHL Works	Low

Table 13.18: PRoW Sensitivity				
PRoW Ref	Nearest highway Links	Link Ref	Relevant Proposed Project Element	Sensitivity
PROW Pentir Rhif 17 (16680)	Fodolydd Lane	34	Order Limits only	Low
NCR 566	A5025	1	LGV/HGV Route	Medium
NCR 566	A5	2	LGV/HGV Route	Medium
NCR 566	UNR 8	28	LGV Route	Medium
NCR 566	B5111	4.1	LGV Route	Medium
NCR 566	B5420	7	LGV Route	Medium
NCR 5	B5110	5	LGV Route	Medium
NCR 5	B5420	6	LGV Route	Medium
NCR 566	Industrial Estate Road	8.1	LGV/HGV Route	Medium
NCR 8	A5025	9	Emergency/Contingency Route	Medium
NCR 8	A5	11	LGV/HGV Route	Medium
NCR 8	A5	11.1	LGV/HGV Route	Medium
NCR 8	A5	13	LGV/HGV Route	Medium
NCR 8	Llanddaniel Rd.	14	LGV/HGV Route	Medium
Wales Coast Path	A5	17	LGV/HGV Enabling Works Route	High
Wales Coast Path	A487	18	LGV/HGV Route	High
Pentir Rhif 111	B4547	19	LGV/HGV Route	Low
Pentir Rhif 111	A4244	20	LGV/HGV Route	Low
Pentir Rhif 111	A55	21	LGV/HGV Route	Low

7.6 BUILT ENVIRONMENT INDICATORS USED BY SENSITIVE AFFECTED PARTIES

7.6.1 Built Environment Indicators used by sensitive affected parties have been identified along a number of links as presented within Table 13.19 below and are shown on Figure 13.9 (**Document 5.13.1.9**).

Table 13.19 Built Environment Indicators used by sensitive affected parties

Link Ref	Link	Built Environment Indicators	Number	Description
1	A5025 between A5 at Valley Crossroads and Wylfa	School	1	Ysgol Gynradd Llanfachraeth is located adjacent to the A5025 in Llanfachraeth
4	B5111 between B5110 and B5112	Playground	1	Fenced playing fields close to B5111 in Rhosmeirch
4.1	B5111 between the B5112 and access B8	School	1	Ysgol Gymuned Llanerchymedd fronting onto Wellington Street off the B5111 in Llanerchymedd
6	B5420 between Llangefni Link Road and B5110	School	1	Coleg Menai Llangefni is set back approximately 250 m from the B5420 with an access road to the link.
9	A5025 between A55 J8 to B5420	Retirement Home	1	Saint Tysillo Nursing Home is located adjacent to the A5025 and The A5 J8
22	B5109	School, College, Nursery	3	Coleg Menai Llangefni can be accessed off this link
				Ysgol Y Graig can be accessed off this link
				Meithrinfa Medra nursery
23	Ffordd y Felin between A5025 and Brynddu Road	School	1	Ysgol Gynradd Camaes is located adjacent to Ffordd Y Felin and accessed from a side road with the entrance

Table 13.19 Built Environment Indicators used by sensitive affected parties				
Link Ref	Link	Built Environment Indicators	Number	Description
				located within 30 m of Ffordd Y Felin

7.7 FUTURE BASELINE PREDICTIONS

Deriving a Future Baseline

7.7.1 As outlined in Section 5 basis of assessment, the future baseline position assumes year on year background traffic growth from the base year of 2016. As a result the baseline traffic flows on construction traffic routes has been increased to account for the future year scenario of 2023, as shown on Table 13.20.

Table 13.20: TEMPro growth factors between base and future years						
Base Year 2016 to Future Year Growth Factor	Isle of Anglesey			Gwynedd		
	AM	PM	Weekday Average	AM	PM	Weekday Average
2016 - 2020	1.052	1.048	1.048	1.059	1.057	1.055
2016 - 2021	1.060	1.055	1.055	1.068	1.065	1.063
2016 - 2022	1.067	1.061	1.062	1.078	1.075	1.072
2016 - 2023	1,074	1.069	**1.068**	1.087	1.084	**1.082**

7.7.2 A future baseline year of 2023 was discussed during TA scoping with IACC and Gwynedd Council and Welsh Government. For the TA this represents the worst case in terms of background traffic growth and the potential for increased congestion at junctions on the local highway network, and also coincides with the peak year of construction activity for Wylfa Newydd Power Station.

7.7.3 Given that the ES is based on percentage increases in traffic, higher levels of baseline traffic growth are likely to reduce the proportion of traffic attributable to the Proposed Development upon the links.

7.7.4 Table 13.21 shows the future baseline flows following the application of the future baseline growth factors shown in Table 13.20. The proportion of HGVs is considered to remain consistent with those currently observed.

Table 13.21: 2023 Future Baseline Traffic Conditions							
Link Reference	Highway Link	Description	24 Hour AADT total	24 hour AADT HGVs	Weekly two-way total traffic movements	Weekly two-way HGV movements	Percentage HGV %
1	A5025	A5025 between A5 at Valley Crossroads and Wylfa.	2,652	176	18,566	1,230	7%
2	A5	A5 between A55 J3 and Valley Crossroads.	7,479	439	52,355	3,075	6%
3	Unnamed Road (UR) 4	UR 4 between B5111 and B2	809	62	5,661	437	8%
4	B5111	B5111 between B5110 and B5112	3,283	142	22,982	995	4%
4.1	B5111	B5111 between the B5112 and access B8	3,606	194	25,243	1,356	5%
5	B5110	B5110 between Llangefni and access C8.	2,707	145	18,947	1,015	5%
6	B5420	B5420 between LLR and B5110	9,622	378	67,352	2,647	4%

Table 13.21: 2023 Future Baseline Traffic Conditions							
Link Reference	Highway Link	Description	24 Hour AADT total	24 hour AADT HGVs	Weekly two-way total traffic movements	Weekly two-way HGV movements	Percentage HGV %
7	B5420	Between Llangefni Link Road and Access D4	2,115	83	14,803	583	4%
7.1	B5420a	Between Access D4 and Crosses Roundabout.	2,115	83	14,803	583	4%
8	A5114	Between A55 J6 Llangefni Link Road.	14,441	785	101,087	5,495	5%
8.1	Industrial Estate Road	Between A5114 via existing carriageway to Llangefni Link Road	6,715	287	47,005	2,011	4%
8.2	LLR	LLR between Llangefni Industrial Estate and the B5420.	6,802	340	47,613	2,381	5%
9	A5025	A5025 between A55 J8 to B5420.	11,987	557	83,906	3,902	5%
11	Unnamed Road 21	Unnamed Road between Star and access E5.	667	29	4,667	206	4%

Table 13.21: 2023 Future Baseline Traffic Conditions

Link Reference	Highway Link	Description	24 Hour AADT total	24 hour AADT HGVs	Weekly two-way total traffic movements	Weekly two-way HGV movements	Percentage HGV %
11.1	Unnamed Road 21	UR between Star Crossroads and Unnamed Road Star	667	29	4,667	206	4%
12	A5152	Between A55 J7 and A5.	5,174	476	36,219	3,334	9%
13	A5	A5 between A5152 and A55 J7a.	4,591	249	32,135	1,745	5%
14	NCR8	Between A5 and access E7	1,119	81	7,836	565	7%
15	Pont Rhonwy Link (PRL)	PRL between A5 and access F1	470	21	3,293	146	4%
16	A4080	A4080 between A5 at tollgate and F2.	4,562	150	31,931	1,053	3%
17	A5	A5 Between A55 J8a and A4080	9,785	437	68,492	3,058	4%
18	A487	A487 Between B4547 and A55 J9.	19,063	1,235	133,442	8,648	6%

Table 13.21: 2023 Future Baseline Traffic Conditions							
Link Reference	Highway Link	Description	24 Hour AADT total	24 hour AADT HGVs	Weekly two-way total traffic movements	Weekly two-way HGV movements	Percentage HGV %
18.1	A4087	A4087 Between A55 J10 and A487	11,507	349	80,551	2,445	3%
19	B4547	B4547 between A4244 and A487.	6,151	216	43,056	1,513	4%
20	A4244	A4244/A5 between B4547 And A55 J11	8,162	535	57,136	3,744	7%
21	A55	Britannia Bridge between A55 J9 and A55 J8a	32,330	1,834	226,311	12,841	6%
22	B5109	B5109 between LLR and access D2	1,756	72	12,294	505	4%
23	Ffordd y Felin	Ffordd y Felin between A5025 and Brynddu Road	1,103	37	7,723	260	3%
24	B5110	B5110 between access C8 and UR 19	2,707	145	18,947	1,015	5%

Table 13.21: 2023 Future Baseline Traffic Conditions							
Link Reference	Highway Link	Description	24 Hour AADT total	24 hour AADT HGVs	Weekly two-way total traffic movements	Weekly two-way HGV movements	Percentage HGV %
25	Brynddu Road	Brynddu Road Between Fordd y Felin and access B2	415	21	2,904	145	5%
26	B5112	B5112 between A55 J5 and B5111	1,300	61	9,102	429	5%
27	UR 1	UR 1 between Brynddu Road and UR 4	86	-	605	-	0%
28	UR 8	UR8 between B5111 and access B11	505	-	3,537	-	0%
29	UR 9	UR9 between B5111 and access C2	642	53	4,492	374	8%
30	Fodolydd Lane	Fodolydd Lane between B4547 and access F3	40	-	279	-	0%
31	UR 10	UR10 between B5111 and access C4	761	47	5,324	332	6%
32	UR 16	UR 16 between B5420 and access E1	452	30	3,163	209	7%

Table 13.21: 2023 Future Baseline Traffic Conditions							
Link Reference	Highway Link	Description	24 Hour AADT total	24 hour AADT HGVs	Weekly two-way total traffic movements	Weekly two-way HGV movements	Percentage HGV %
33	UR 19	UR 19 between B5110 and access C6	86	-	601	-	0%
34	Fodolydd Lane	Fodolydd Lane between B4547 and access F7 (enabling works only)	50	-	348	-	0%
35	UR 3	UR 3 between Brynddu Road and access A9	91	-	636	-	0%
36	North of J7	North of J7 between A55 and access E5A	136	9	949	64	7%

8 Potential Effects

8.1 INTRODUCTION

8.1.1 This section describes the potential traffic and transport effects that could occur as a result of the Proposed Development in the absence of mitigation.

8.2 IDENTIFICATION OF POTENTIAL EFFECTS

8.2.1 There are a range of potential traffic effects that could be caused by the Proposed Development prior to mitigation. These are described in the table below. Although the receptors considered in Section 9 mitigation and residual effects are the individual highway links, the receptor column in Table 13.22 below provides an indication of the affected parties taken into consideration in identifying the sensitivity of each of the links. Operational and Maintenance effects have been screened out as explained in Section 5.

Table 13.22 Potential Traffic Effects of the Proposed Development

Potential Effect	Description	Affected Party	Built Environment Indicators on Highway Link	Phase			
				C[4]	O	M	D
Severance	Severance is the perceived division that can occur within a community when it becomes separated by a major traffic artery. It is also considered here in the context of driver severance, when there is difficulty accessing onto a heavily trafficked road. This	People at Home	Residential Properties	✓			✓
		People in workplaces	Offices, industrial units, employment uses	✓			✓
		Sensitive groups (children, elderly and disabled)	Schools, play areas, care/retirement homes, disabled parking bays	✓			✓
		Sensitive locations	Hospitals, places of worship,	✓			✓

[4] C = Construction, O = Operation, M= Maintenance, D = Decommissioning

Table 13.22 Potential Traffic Effects of the Proposed Development							
Potential Effect	Description	Affected Party	Built Environment Indicators on Highway Link	Phase			
				C[4]	O	M	D
	assessment considers both total traffic and the proportion of HGVs.		schools historic buildings				
		People walking	Footways, PRoW, crossings	✓			✓
		People cycling	On/off-road designated cycle routes	✓			✓
		Open spaces, recreational sites, shopping areas	Parks, play areas, shops, community centres	✓			✓
		Road users	Roads, junctions, road classification, baseline traffic volumes, signage.	✓			✓

Table 13.22 Potential Traffic Effects of the Proposed Development							
Potential Effect	Description	Affected Party	Built Environment Indicators on Highway Link	Phase			
				C[4]	O	M	D
Driver Delay	Driver Delay is an effect cited in the IEMA guidance and relates to incremental increases in traffic as outlined in the Table below. As a further consideration, where any temporary road closures or traffic management is likely to be in place to enable the construction of the Proposed Development, any additional delay caused as a consequence of following diversion routes will be reported.	Road users	Roads, junctions, road classification, baseline traffic volumes, signage.	✓			✓
Pedestrian Delay	Pedestrian Delay occurs when there is difficulty crossing a heavily trafficked road. Effects are only likely to be realised when the total two way traffic on the carriageway	Sensitive groups (children, elderly and disabled)	Schools, play areas, care/retirement homes, disabled parking bays	✓			✓
		Sensitive locations	Hospitals, places of worship, schools historic buildings	✓			✓

Table 13.22 Potential Traffic Effects of the Proposed Development							
Potential Effect	Description	Affected Party	Built Environment Indicators on Highway Link	Phase			
				C[4]	O	M	D
	exceeds 1,400 vehicles per hour.	People walking	Footways, PRoW, crossings	✓			✓
		Open spaces, recreational sites, shopping areas	Parks, play areas, shops, community centres	✓			✓
Pedestrian Amenity	Pedestrian Amenity is similar to Pedestrian Delay in that there needs to be a fairly significant proportional increase in traffic for baseline effects to be considerably worsened. The IEMA guidelines suggest that traffic needs to double for effects to become significant. This assessment acknowledges that lower proportional increases may have minor and moderate impacts	Sensitive groups (children, elderly and disabled)	Schools, play areas, care/retirement homes, disabled parking bays	✓			✓
		Sensitive locations	Hospitals, places of worship, schools historic buildings	✓			✓
		People walking	Footways, PRoW, crossings	✓			✓
		Open spaces, recreational sites, shopping areas	Parks, play areas, shops, community centres	✓			✓
Fear and Intimidation	Fear and Intimidation occurs through a combination of traffic flow, speed,	People at Home	Residential Properties	✓			✓
		People in workplaces	Offices, industrial units,	✓			✓

Table 13.22 Potential Traffic Effects of the Proposed Development							
Potential Effect	Description	Affected Party	Built Environment Indicators on Highway Link	Phase			
				C[4]	O	M	D
	proportion of HGVs and the proximity of the above to people or receptors on highway links. These indicators are often heightened by a perceived lack of protection or buffers from the highway or through narrow or non-existent pavements. The assessment will consider each link on a case by case basis		employment uses				
		Sensitive groups (children, elderly and disabled)	Schools, play areas, care/retirement homes, disabled parking bays	✓			✓
		Sensitive locations	Hospitals, places of worship, schools historic buildings	✓			✓
		People walking	Footways, PRoW, crossings	✓			✓
		People cycling	On/off-road designated cycle routes	✓			✓
		Open spaces, recreational sites, shopping areas	Parks, play areas, shops, community centres	✓			✓
		Road users	Roads, junctions, road classification, baseline traffic volumes, signage.	✓			✓
Highway Safety	Highway safety considers Personal	People at Home	Residential Properties	✓			✓

Table 13.22 Potential Traffic Effects of the Proposed Development							
Potential Effect	Description	Affected Party	Built Environment Indicators on Highway Link	Phase			
				C[4]	O	M	D
	Injury Accident (PIA) data obtained from CrashMap for the last five years at junctions and links along the proposed construction traffic routes has been used to assess whether the additional traffic during construction of the proposed development is likely to have a detrimental effect of road safety. A detailed methodology used in the Department for Transport's WebTAG guidance is provided in the TA.	People in workplaces	Offices, industrial units, employment uses	✓			✓
		Sensitive groups (children, elderly and disabled)	Schools, play areas, care/retirement homes, disabled parking bays	✓			✓
		Sensitive locations	Hospitals, places of worship, schools historic buildings	✓			✓
		People walking	Footways, PRoW, crossings	✓			✓
		People cycling	On/off-road designated cycle routes	✓			✓
		Open spaces, recreational sites, shopping areas	Parks, play areas, shops, community centres	✓			✓
		Road users	Roads, junctions, road classification, baseline traffic volumes, signage.				

Table 13.22 Potential Traffic Effects of the Proposed Development							
Potential Effect	Description	Affected Party	Built Environment Indicators on Highway Link	Phase			
				C[4]	O	M	D
PRoW	PRoW are assessed in a similar fashion to that of Driver Delay. Increases to traffic flows where PRoWs intersect with highway links are considered on a percentage increase basis, however, where PRoWs are diverted or closed in part these are considered on the basis of how long disruption to the existing route would occur for.	People walking	Footways, PRoW, crossings	✓			✓
		People cycling	On/off-road designated cycle routes	✓			✓

9 Mitigation and Residual Effects

9.1 INTRODUCTION

9.1.1 This section considers the mitigation measures required, and then reports the residual significance of effects.

9.1.2 The effects reported in this chapter are specific to the construction of the Proposed Development. The number of vehicle movements generated by decommissioning of the Proposed Development would be likely to be lower than those generated during construction, and substantially lower on construction traffic routes used to transport material required for or arising from the tunnel construction, as these movements would not recur. In addition, it is likely that background traffic growth would increase the future baseline traffic figures, and hence the proportionate increase as a result of traffic generated by the decommissioning of the Proposed Development would be likely to be lower than during construction. As such, whilst the assessment findings below can be taken as indicative of the effects of decommissioning, the actual effects are likely to be lower, and in some cases substantially lower.

9.2 MITIGATION

Mitigation by Design

9.2.1 Mitigation by design has been an important process in managing the potential effects of the Proposed Development. In relation to Traffic and Transport mitigation by design has included the selection and specification of access points off the public highway. Construction traffic routes have been selected to reduce, where possible, traffic effects on links that would be more sensitive to changes in traffic volumes, due to the presence of built environment indicators used by sensitive affected parties.

9.2.2 In addition to the above, some links included within the assessment are designated as construction traffic routes for use in contingency situations, i.e. where other preferred routes are unavailable. This contingency designation acknowledges it is desirable to reduce potential traffic effects arising from the construction of the Proposed Development on some links wherever possible, as well as noting constraints of road geometry and visibility.

Control and Management Measures

9.2.3 Table 13.23 below outlines the measures included within the CEMP, (**Document 7.4**) and the OCTMP (**Document 7.5**) that have direct relevance to transport effects included within this assessment.

Table 13.23: General CEMP and OCTMP Measures Relevant to Transport Effects

Code	Description	Reason
GP11 (CEMP)	Working Hours will be between the hours of 07:00 to 19:00 hrs Monday to Saturday and between 07:00 and 17:00 on Sundays. Blasting at the tunnel shafts will be limited to 10:00 to 16:00 Monday to Friday and 10:00 to 13:00 Saturday and Sundays. Surface drilling and curtain grouting associated with shaft construction is limited to Monday to Friday 07:00 to 19:00 hours and 07:00 to 13:00 hours on Saturdays.	Transport effects will be kept to working hours to keep any effects to more socially acceptable times of day.
1 (OCTMP)	Prescribed HGV and LGV Construction Routes. Only proposed construction traffic routes are to be used for the construction of the Proposed Development.	Any potential effects are limited to the links included in this assessment. Prescription of routes for LGV only will reduce effects such as Fear and Intimidation and Severance as overall total traffic volumes are low.
4 (OCTMP)	Road Safety Information. National Grid, in consultation with the LHAs and Emergency Services, will promote and publicise Road Safety Information during the construction of the Proposed Development	Potential benefits for Highway Safety.

Table 13.23: General CEMP and OCTMP Measures Relevant to Transport Effects		
Code	Description	Reason
14 (OCTMP)	HGV Traffic Movement and Timing Restrictions, which could include restrictions on routes with schools, congested junctions (as determined in the TA (Document 5.13.1.2)	Reduced effects at particular times of day past schools or other Built Environment Indicators used by Sensitive Affected Parties.

Mitigation Measures

9.2.4 The OCTMP (**Document 7.5**) and PRoW Management Plan (**Document 7.6**) include a number of measures that can potentially reduce the effects assessed. This is notably in the form of designating some construction traffic routes for contingency use in the event that preferred routes are unavailable. These documents also include measures that help to make the Proposed Development acceptable in transport terms, despite not being directly related to a traffic environmental effect. For example, this includes measures to ensure the Proposed Development can be accessed from temporary access points with appropriate visibility splays, and are micro-sited in the most appropriate locations.

9.3 ASSIGNMENT OF CONSTRUCTION TRAFFIC

Primary Assessment Construction Traffic

9.3.1 Construction traffic has been assigned to the highway network in accordance with the methodology outlined in the TA (**Document 5.13.2.1**). This assignment applies to both the primary and secondary assessments as outlined in Section 4 methodology. The primary assessment considers the traffic flows associated with the peak week of vehicle movements for the Proposed Development.

9.3.2 The results from the Primary Assessment are listed in Table 13.24.

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Table 13.24: 2023 Future Baseline Traffic Conditions with Peak week Development Traffic (Primary Assessment)

Link Reference	Highway Link	Description	24 Hour AADT total	24 hour AADT HGVs	2023 Weekly two-way total traffic movements	2023 Weekly two-way HGV movements	Percentage HGV %	TBM				Drill and Blast			
								Primary Peak week LGV	Primary Peak week HGV	% Increase HGV	% Increase Total Traffic	Primary Peak week LGV	Primary Peak week HGV	% Increase HGV	% Increase Total Traffic
1	A5025	A5025 between A5 at Valley Crossroads and Wylfa.	2,652	176	18,566	1,230	7%	202	793	64%	5%	202	793	64%	5%
2	A5	A5 between A55 J3 and Valley Crossroads.	7,479	439	52,355	3,075	6%	202	793	26%	2%	202	793	26%	2%
3	UR 4	UR 4 between B5111 and B2	809	62	5,661	437	8%	106	518	119%	11%	106	518	119%	11%
4	B5111	B5111 between B5110 and B5112	3,283	142	22,982	995	4%	310	1,242	125%	7%	310	1,242	125%	7%
4.1	B5111	B5111 between the B5112 and access B8	3,606	194	25,243	1,356	5%	310	1,242	92%	6%	310	1,242	92%	6%
5	B5110	B5110 between Llangefni and access C8.	2,707	145	18,947	1,015	5%	110	488	48%	3%	110	488	48%	3%
6	B5420	B5420 between LLR and B5110	9,622	378	67,352	2,647	4%	310	1,242	47%	2%	310	1,242	47%	2%

Table 13.24: 2023 Future Baseline Traffic Conditions with Peak week Development Traffic (Primary Assessment)

Link Reference	Highway Link	Description	24 Hour AADT total	24 hour AADT HGVs	2023 Weekly two-way total traffic movements	2023 Weekly two-way HGV movements	Percentage HGV %	TBM				Drill and Blast			
								Primary Peak week LGV	Primary Peak week HGV	% Increase HGV	% Increase Total Traffic	Primary Peak week LGV	Primary Peak week HGV	% Increase HGV	% Increase Total Traffic
7	B5420	Between Llangefni Link Road and Access D4	2,115	83	14,803	583	4%	56	490	84%	4%	56	490	84%	4%
7.1	B5420 a	Between Access D4 and Crosses Roundabout.	2,115	83	14,803	583	4%	56	490	84%	4%	56	490	84%	4%
8	A5114	Between A55 J6 Llangefni Link Road.	14,441	785	101,087	5,495	5%	310	1,242	23%	2%	310	1,242	23%	2%
8.1	Industrial Estate Road	Between A5114 via existing carriageway to Llangefni Link Road	6,715	287	47,005	2,011	4%	310	1,242	62%	3%	310	1,242	62%	3%
8.2	LLR	LLR between Llangefni Industrial Estate and the B5420.	6,802	340	47,613	2,381	5%	310	1,242	52%	3%	310	1,242	52%	3%
9	A5025	A5025 between A55 J8 to B5420.	11,987	557	83,906	3,902	5%	56	490	13%	1%	56	490	13%	1%

Table 13.24: 2023 Future Baseline Traffic Conditions with Peak week Development Traffic (Primary Assessment)

Link Reference	Highway Link	Description	24 Hour AADT total	24 hour AADT HGVs	2023 Weekly two-way total traffic movements	2023 Weekly two-way HGV movements	Percentage HGV %	TBM				Drill and Blast			
								Primary Peak week LGV	Primary Peak week HGV	% Increase HGV	% Increase Total Traffic	Primary Peak week LGV	Primary Peak week HGV	% Increase HGV	% Increase Total Traffic
11	UR 21	Unnamed Road between Star and access E5.	667	29	4,667	206	4%	92	334	162%	9%	92	334	162%	9%
11.1	UR 21	UR between Star Crossroads and Unnamed Road Star	667	29	4,667	206	4%	92	334	162%	9%	92	334	162%	9%
12	A5152	Between A55 J7 and A5.	5,174	476	36,219	3,334	9%	520	652	20%	3%	520	565	17%	3%
13	A5	A5 between A5152 and A55 J7a.	4,591	249	32,135	1,745	5%	520	652	37%	4%	520	565	32%	4%
14	NCR8	Between A5 and access E7	1,119	81	7,836	565	7%	520	652	115%	15%	520	565	100%	15%
15	PRL	PRL between A5 and access F1	470	21	3,293	146	4%	520	652	446%	36%	520	565	386%	36%
16	A4080	A4080 between A5 at tollgate and F2.	4,562	150	31,931	1,053	3%	360	401	38%	2%	420	390	37%	2%
17	A5	A5 Between A55 J8a and A4080	9,785	437	68,492	3,058	4%	360	401	13%	1%	420	390	13%	1%

Table 13.24: 2023 Future Baseline Traffic Conditions with Peak week Development Traffic (Primary Assessment)

Link Reference	Highway Link	Description	24 Hour AADT total	24 hour AADT HGVs	2023 Weekly two-way total traffic movements	2023 Weekly two-way HGV movements	Percentage HGV %	TBM				Drill and Blast			
								Primary Peak week LGV	Primary Peak week HGV	% Increase HGV	% Increase Total Traffic	Primary Peak week LGV	Primary Peak week HGV	% Increase HGV	% Increase Total Traffic
18	A487	A487 Between B4547 and A55 J9.	19,063	1,235	133,442	8,648	6%	736	1,069	12%	1%	736	1,069	12%	1%
18.1	A4087	A4087 Between A55 J10 and A487	11,507	349	80,551	2,445	3%	368	535	22%	1%	368	535	22%	1%
19	B4547	B4547 between A4244 and A487.	6,151	216	43,056	1,513	4%	736	1,069	71%	4%	736	1,069	71%	4%
20	A4244	A4244/A5 between B4547 And A55 J11	8,162	535	57,136	3,744	7%	736	1,069	29%	3%	736	1,069	29%	3%
21	A55 Britannia Bridge	Britannia Bridge between A55 J9 and A55 J8a	32,330	1,834	226,311	12,841	6%	928	1,731	13%	1%	696	1,691	13%	1%
22	B5109	B5109 between LLR and access D2	1,756	72	12,294	505	4%	204	-	0%	2%	204	-	0%	2%
23	Ffordd y Felin	Ffordd y Felin between A5025 and Brynddu Road	1,103	37	7,723	260	3%	202	-	0%	3%	202	-	0%	3%
24	B5110	B5110 between access C8 and UR 19	2,707	145	18,947	1,015	5%	204	-	0%	1%	204	-	0%	1%

Table 13.24: 2023 Future Baseline Traffic Conditions with Peak week Development Traffic (Primary Assessment)

Link Reference	Highway Link	Description	24 Hour AADT total	24 hour AADT HGVs	2023 Weekly two-way total traffic movements	2023 Weekly two-way HGV movements	Percentage HGV %	TBM				Drill and Blast			
								Primary Peak week LGV	Primary Peak week HGV	% Increase HGV	% Increase Total Traffic	Primary Peak week LGV	Primary Peak week HGV	% Increase HGV	% Increase Total Traffic
25	Brynddu Road	Brynddu Road Between Forddy Felin and access B2	415	21	2,904	145	5%	202	-	0%	7%	202	-	0%	7%
26	B5112	B5112 between A55 J5 and B5111	1,300	61	9,102	429	5%	310	-	0%	3%	310	-	0%	3%
27	UR 1	UR 1 between Brynddu Road and UR 4	86	-	605	-	0%	202	-	0%	33%	202	-	0%	33%
28	UR 8	UR8 between B5111 and access B11	505	-	3,537	-	0%	310	-	0%	9%	310	-	0%	9%
29	UR 9	UR9 between B5111 and access C2	642	53	4,492	374	8%	310	-	0%	7%	310	-	0%	7%
30	Fodolydd Lane	Fodolydd Lane between B4547 and access F3	40	-	279	-	0%	420	-	0%	151%	420	-	0%	151%
31	UR 10	UR10 between B5111 and access C4	761	47	5,324	332	6%	310	-	0%	6%	310	-	0%	6%

Table 13.24: 2023 Future Baseline Traffic Conditions with Peak week Development Traffic (Primary Assessment)

Link Reference	Highway Link	Description	24 Hour AADT total	24 hour AADT HGVs	2023 Weekly two-way total traffic movements	2023 Weekly two-way HGV movements	Percentage HGV %	TBM				Drill and Blast			
								Primary Peak week LGV	Primary Peak week HGV	% Increase HGV	% Increase Total Traffic	Primary Peak week LGV	Primary Peak week HGV	% Increase HGV	% Increase Total Traffic
32	UR 16	UR 16 between B5420 and access E1	452	30	3,163	209	7%	116	-	0%	4%	116	-	0%	4%
33	UR 19	UR 19 between B5110 and access C6	86	-	601	-	0%	204	-	0%	34%	204	-	0%	34%
34	Fodolydd Lane	Fodolydd Lane between B4547 and access F7 (enabling works only)	50	-	348	-	0	20	35	100%	16%	20	35	100%	16%
35	UR 3	UR 3 between Brynddu Road and access A9	91	-	636	-	0%	202	-	0%	32%	202	-	0%	32%
36	North of J7	North of J7 between A55 and access E5A	136	9	949	64	7%	92	334	521%	45%	92	334	521%	45%

Secondary Assessment Construction Traffic

9.3.3 Construction traffic is assigned to the highway network in accordance with the methodology outlined in the TA (**Document 5.13.2.1**). This assignment applies to the secondary assessment, as outlined in Section 4 methodology, and which considers the traffic flows associated with an average weekly flow taken for each individual link over the peak year of vehicle movements .

9.3.4 The Secondary Assessment therefore results in a reduced weekly construction traffic flow than the Primary Assessment. The methodology behind the secondary traffic assignment is consistent with the approach to assessment used within Chapter 15 Construction Noise and Vibration (**Document 5.15**) and Chapter 14 Air Quality and Emissions (**Document 5.14**).

9.3.5 Only links which show significant effects calculated in the Primary Assessment, under the relevant environmental effect assessment, are subject to the Secondary Assessment. This will depend upon the criteria specific to the environmental effect in question and therefore all assigned Secondary Assessment traffic flows are shown in Table 13.25.

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Table 13.25: 2023 Future Baseline Traffic Conditions with Peak Year Development Traffic (Secondary Assessment)

Link Ref	Highway Link	Description	24 Hour AADT total	24 hour AADT HGVs	2023 Weekly two-way total traffic movements	2023 Weekly two-way HGV movements	% HGV	TBM				Drill and Blast			
								Secondary Peak week LGV	Secondary Peak week HGV	% Increase HGV	% Increase Total Traffic	Secondary Peak week LGV	Secondary Peak week HGV	% Increase HGV	% Increase Total Traffic
1	A5025	A5025 between A5 at Valley Crossroads and Wylfa.	2,652	176	18,566	1,230	7%	238	197	16%	2%	238	197	16%	2%
2	A5	A5 between A55 J3 and Valley Crossroads.	7,479	439	52,355	3,075	6%	238	197	6%	1%	238	197	6%	1%
3	UR 4	UR 4 between B5111 and B2	809	62	5,661	437	8%	31	63	14%	2%	31	63	14%	2%
4	B5111	B5111 between B5110 and B5112	3,283	142	22,982	995	4%	106	246	25%	2%	106	246	25%	2%
4.1	B5111	B5111 between the B5112 and access B8	3,606	194	25,243	1,356	5%	106	246	18%	1%	106	246	18%	1%
5	B5110	B5110 between Llangefni and access C8.	2,707	145	18,947	1,015	5%	55	154	15%	1%	55	154	15%	1%
6	B5420	B5420 between LLR and B5110	9,622	378	67,352	2,647	4%	179	436	16%	1%	179	436	16%	1%

Table 13.25: 2023 Future Baseline Traffic Conditions with Peak Year Development Traffic (Secondary Assessment)

Link Ref	Highway Link	Description	24 Hour AADT total	24 hour AADT HGVs	2023 Weekly two-way total traffic movements	2023 Weekly two-way HGV movements	% HGV	TBM				Drill and Blast			
								Secondary Peak week LGV	Secondary Peak week HGV	% Increase HGV	% Increase Total Traffic	Secondary Peak week LGV	Secondary Peak week HGV	% Increase HGV	% Increase Total Traffic
7	B5420	Between Llangefni Link Road and Access D4	2,115	83	14,803	583	4%	108	82	14%	1%	108	82	14%	1%
7.1	B5420 a	Between Access D4 and Crosses Roundabout.	2,115	83	14,803	583	4%	108	82	14%	1%	108	82	14%	1%
8	A5114	Between A55 J6 Llangefni Link Road.	14,441	785	101,087	5,495	5%	218	516	9%	1%	218	516	9%	1%
8.1	Industrial Estate Road	Between A5114 via existing carriageway to Llangefni Link Road	6,715	287	47,005	2,011	4%	218	516	26%	2%	218	516	26%	2%
8.2	LLR	LLR between Llangefni Industrial Estate and the B5420.	6,802	340	47,613	2,381	5%	218	516	22%	2%	218	516	22%	2%
9	A5025	A5025 between A55 J8 to B5420.	11,987	557	83,906	3,902	5%	108	82	2%	0%	108	82	2%	0%

Table 13.25: 2023 Future Baseline Traffic Conditions with Peak Year Development Traffic (Secondary Assessment)

Link Ref	Highway Link	Description	24 Hour AADT total	24 hour AADT HGVs	2023 Weekly two-way total traffic movements	2023 Weekly two-way HGV movements	% HGV	TBM				Drill and Blast			
								Secondary Peak week LGV	Secondary Peak week HGV	% Increase HGV	% Increase Total Traffic	Secondary Peak week LGV	Secondary Peak week HGV	% Increase HGV	% Increase Total Traffic
11	UR 21	Unnamed Road between Star and access E5.	667	29	4,667	206	4%	24	51	25%	2%	24	51	25%	2%
11.1	UR 21	UR between Star Crossroads and Unnamed Road Star	667	29	4,667	206	4%	24	51	25%	2%	24	51	25%	2%
12	A5152	Between A55 J7 and A5.	5,174	476	36,219	3,334	9%	389	287	9%	2%	425	387	12%	2%
13	A5	A5 between A5152 and A55 J7a.	4,591	249	32,135	1,745	5%	389	287	16%	2%	425	387	22%	2%
14	NCR8	Between A5 and access E7	1,119	81	7,836	565	7%	384	263	46%	8%	420	377	67%	8%
15	PRL	PRL between A5 and access F1	470	21	3,293	146	4%	384	263	179%	20%	420	377	258%	20%
16	A4080	A4080 between A5 at tollgate and F2.	4,562	150	31,931	1,053	3%	384	263	25%	2%	420	377	36%	2%
17	A5	A5 Between A55 J8a and A4080	9,785	437	68,492	3,058	4%	384	263	9%	1%	420	377	12%	1%

Table 13.25: 2023 Future Baseline Traffic Conditions with Peak Year Development Traffic (Secondary Assessment)

Link Ref	Highway Link	Description	24 Hour AADT total	24 hour AADT HGVs	2023 Weekly two-way total traffic movements	2023 Weekly two-way HGV movements	% HGV	TBM				Drill and Blast			
								Secondary Peak week LGV	Secondary Peak week HGV	% Increase HGV	% Increase Total Traffic	Secondary Peak week LGV	Secondary Peak week HGV	% Increase HGV	% Increase Total Traffic
18	A487	A487 Between B4547 and A55 J9.	19,063	1,235	133,442	8,648	6%	566	510	6%	1%	541	455	5%	1%
18.1	A4087	A4087 Between A55 J10 and A487	11,507	349	80,551	2,445	3%	283	255	10%	1%	271	227	9%	1%
19	B4547	B4547 between A4244 and A487.	6,151	216	43,056	1,513	4%	566	510	34%	2%	541	455	30%	2%
20	A4244	A4244/A5 between B4547 And A55 J11	8,162	535	57,136	3,744	7%	566	510	14%	2%	541	455	12%	2%
21	A55 Britannia Bridge	Britannia Bridge between A55 J9 and A55 J8a	32,330	1,834	226,311	12,841	6%	657	795	6%	1%	693	782	6%	1%
22	B5109	B5109 between LLR and access D2	1,756	72	12,294	505	4%	51	-	0%	0%	51	-	0%	0%
23	Ffordd y Felin	Ffordd y Felin between A5025 and Brynddu Road	1,103	37	7,723	260	3%	59	-	0%	1%	59	-	0%	1%
24	B5110	B5110 between access C8 and UR 19	2,707	145	18,947	1,015	5%	107	-	0%	1%	107	-	0%	1%

Table 13.25: 2023 Future Baseline Traffic Conditions with Peak Year Development Traffic (Secondary Assessment)

Link Ref	Highway Link	Description	24 Hour AADT total	24 hour AADT HGVs	2023 Weekly two-way total traffic movements	2023 Weekly two-way HGV movements	% HGV	TBM				Drill and Blast			
								Secondary Peak week LGV	Secondary Peak week HGV	% Increase HGV	% Increase Total Traffic	Secondary Peak week LGV	Secondary Peak week HGV	% Increase HGV	% Increase Total Traffic
25	Brynddu Road	Brynddu Road Between Fordd y Felin and access B2	415	21	2,904	145	5%	59	-	0%	2%	59	-	0%	2%
26	B5112	B5112 between A55 J5 and B5111	1,300	61	9,102	429	5%	180	-	0%	2%	180	-	0%	2%
27	UR 1	UR 1 between Brynddu Road and UR 4	86	-	605	-	0%	59	-	0%	10%	59	-	0%	10%
28	UR 8	UR8 between B5111 and access B11	505	-	3,537	-	0%	180	-	0%	5%	180	-	0%	5%
29	UR 9	UR9 between B5111 and access C2	642	53	4,492	374	8%	180	-	0%	4%	180	-	0%	4%
30	Fodolydd Lane	Fodolydd Lane between B4547 and access F3	40	-	279	-	0%	371	-	0%	133%	371	-	0%	133%
31	UR 10	UR10 between B5111 and access C4	761	47	5,324	332	6%	180	-	0%	3%	180	-	0%	3%

Table 13.25: 2023 Future Baseline Traffic Conditions with Peak Year Development Traffic (Secondary Assessment)

Link Ref	Highway Link	Description	24 Hour AADT total	24 hour AADT HGVs	2023 Weekly two-way total traffic movements	2023 Weekly two-way HGV movements	% HGV	TBM				Drill and Blast			
								Secondary Peak week LGV	Secondary Peak week HGV	% Increase HGV	% Increase Total Traffic	Secondary Peak week LGV	Secondary Peak week HGV	% Increase HGV	% Increase Total Traffic
32	UR 16	UR 16 between B5420 and access E1	452	30	3,163	209	7%	38	-	0%	1%	38	-	0%	1%
33	UR 19	UR 19 between B5110 and access C6	86	-	601	-	0%	51	-	0%	8%	51	-	0%	8%
34	Fodolydd Lane	Fodolydd Lane between B4547 and access F7 (enabling works only)	50	-	348	-	0	1	2	100%	1%	1	2	100%	1%
35	UR 3	UR 3 between Brynddu Road and access A9	91	-	636	-	0%	59	-	0%	9%	59	-	0%	9%
36	North of J7	North of J7 between A55 and access E5A	136	9	949	64	7%	24	51	80%	8%	24	51	80%	8%

Abnormal Indivisible Load (AIL) Movements

9.3.6 The construction of the Proposed Development would require a number of Abnormal Indivisible Load (AIL) vehicles to transport bespoke equipment. These large vehicles would serve different parts of the Proposed Development, routeing to Braint and Tŷ Fodol THH and CSECs and Pentir substation. These movements would be relatively few in number and would be unlikely to coincide with the peak year of construction traffic for the Proposed Development and, as such, would not be anticipated to result in effects of any greater significance than those reported later in this section. Table 13.26 summarises the AIL movements required for the construction of the Proposed Development.

Table 13.26: Summary of AIL Movements

Location	TBM	Cable	Substation	Comments
Braint	8	0	0	For delivery of TBM in tunnel scenario 1 prior to tunnelling commencing. For extraction of TBM in tunnel scenario 2 following main tunnel drive.
Tŷ Fodol	8	72	0	For delivery of TBM in tunnel scenario 2 prior to tunnelling commencing. For extraction of TBM in tunnel scenario 1 following main tunnel drive. For delivery of cables in tunnel scenario 1. For delivery of cables in tunnel scenario 2 and 3.
Pentir Substation	0	0	2	For delivery of shunt reactor.
Wylfa	0	0	0	
Total	**16**	**72**	**2**	

9.4 SEVERANCE

Severance - Primary and Secondary Assessment

9.4.1 Table 13.27 presents the full results of the Primary and Secondary severance assessments. The table reports the link sensitivity and the magnitude of effect for both the primary and secondary assessments, and for both the TBM and the Drill and Blast scenarios. Following this a commentary is provided, which sets out the factors that have been taken into account in reaching a conclusion as to the residual effect, which is reported in the final column.

Table 13.27: Severance Assessment with Residual Effects

Link Reference	Link	Description	Link Sensitivity	Magnitude of Effect				Assessments used and calculated effects	Additional Commentary to reach Final Residual Effect	Final Residual Effect
				OHL + TBM		OHL + Drill and Blast				
				Primary	Secondary	Primary	Secondary			
1	A5025	A5025 between A5 at Valley Crossroads and Wylfa.	Medium	Medium	Low	Medium	Low	Primary = Moderate Secondary = Minor	The finding of minor significance is for the average traffic over the peak year. It is not anticipated that the peak year traffic levels would extend beyond a period longer than 12 months. The method of tunnel construction does not change the impact upon this link.	**Minor - Not Significant**
2	A5	A5 between A55 J3 and Valley Crossroads .	Low	Low	Very Low	Low	Very Low	Primary = Negligible	The finding of negligible significance is for the primary peak week assessment. It is not anticipated peak week traffic levels would extend beyond four weeks. The method of tunnel construction does not change the impact upon this link.	**Negligible - Not Significant**
3	UR 4	UR 4 between B5111 and B2	Medium	High	Low	High	Low	Primary = Major Secondary= Minor	The finding of minor significance is for the average traffic over the peak year. It is not anticipated that the peak year traffic levels would extend beyond a period longer than 12 months. The method of tunnel construction does not change the impact upon this link.	**Minor - Not Significant**
4	B5111	B5111 between B5110 and B5112	Medium	High	Low	High	Low	Primary = Major Secondary= Minor	The finding of minor significance is for the average traffic over the peak year. It is not anticipated that the peak year traffic levels would extend beyond a period longer than 12 months. The method of tunnel construction does not change the impact upon this link.	**Minor - Not Significant**
4.1	B5111	B5111 between the B5112 and access B8	Medium	High	Low	High	Low	Primary = Major Secondary= Minor	The finding of minor significance is for the average traffic over the peak year. It is not anticipated that the peak year traffic levels would extend beyond a period longer than 12 months. The method of tunnel construction does not change the impact upon this link.	**Minor - Not Significant**
5	B5110	B5110 between Llangefni and access C8.	Medium	Medium	Low	Medium	Low	Primary = Moderate Secondary= Minor	The finding of minor significance is for the average traffic over the peak year. It is not anticipated that the peak year traffic levels would extend beyond a period longer than 12 months. The method of tunnel construction does not change the impact upon this link.	**Minor - Not Significant**
6	B5420	B5420 between LLR and B5110	Medium	Medium	Low	Medium	Low	Primary = Moderate	The finding of minor significance is for the average traffic over the peak year. It is not anticipated that the peak year traffic levels would extend beyond a period longer than 12	**Minor - Not Significant**

Table 13.27: Severance Assessment with Residual Effects

Link Reference	Link	Description	Link Sensitivity	Magnitude of Effect				Assessments used and calculated effects	Additional Commentary to reach Final Residual Effect	Final Residual Effect
				OHL + TBM		OHL + Drill and Blast				
				Primary	Secondary	Primary	Secondary			
								Secondary = Minor	months. The method of tunnel construction does not change the impact upon this link.	
7	B5420	Between Llangefni Link Road and Access D4	Medium	Medium	Low	Medium	Low	Primary = Moderate Secondary = Minor	The finding of minor significance is for the average traffic over the peak year. It is not anticipated that the peak year traffic levels would extend beyond a period longer than 12 months. The method of tunnel construction does not change the impact upon this link.	**Minor - Not Significant**
7.1	B5420a	Between Access D4 and Crosses Roundabout.	Medium	Medium	Low	Medium	Low	Primary = Moderate Secondary = Minor	This is proposed as a contingency route for OHL traffic, in the event that link 7 were unavailable. The forecast levels of traffic are therefore unlikely to be experienced. The finding of minor significance is for the average traffic over the peak year. It is not anticipated that the peak year traffic levels would extend beyond a period longer than 12 months. The method of tunnel construction does not change the impact upon this link.	**Negligible - Not Significant**
8	A5114	Between A55 J6 Llangefni Link Road.	Low	Low	Very Low	Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
8.1	Industrial Estate Road	Between A5114 via existing carriageway to Llangefni Link Road	Medium	Medium	Low	Medium	Low	Primary = Moderate Secondary = Minor	This is a contingency route for OHL traffic, in the event that link 8.2 were unavailable. The forecast levels of traffic are therefore unlikely to be experienced. The finding of minor significance is for the average traffic over the peak year. It is not anticipated that the peak year traffic levels would extend beyond a period longer than 12 months. The method of tunnel construction does not change the impact upon this link.	**Negligible - Not Significant**
8.2	Llangefni Link Road (LLR)	LLR between Llangefni Industrial Estate and the B5420.	Low	Medium	Low	Medium	Low	Primary = Minor		**Minor - Not Significant**

Table 13.27: Severance Assessment with Residual Effects

Link Reference	Link	Description	Link Sensitivity	Magnitude of Effect				Assessments used and calculated effects	Additional Commentary to reach Final Residual Effect	Final Residual Effect
				OHL + TBM		OHL + Drill and Blast				
				Primary	Secondary	Primary	Secondary			
9	A5025	A5025 between A55 J8 to B5420.	Low	Low	Very Low	Low	Very Low	Primary = Negligible	This is a contingency route for OHL traffic, if primary routes are unavailable. The forecast levels of traffic are therefore unlikely to be experienced.	**Negligible - Not Significant**
11	UR 21	Unnamed Road between Star and access E5.	Medium	High	Low	High	Low	Primary = Major Secondary = Minor	The finding of minor significance is for the average traffic over the peak year. It is not anticipated that the peak year traffic levels would extend beyond a period longer than 12 months. The method of tunnel construction does not change the impact upon this link.	**Minor - Not Significant**
11.1	Unnamed Road 21	UR between Star Crossroads and Unnamed Road Star	Low	High	Low	High	Low	Primary = Moderate Secondary = Negligible	The finding of negligible significance is for the average traffic over the peak year. It is not anticipated that the peak year traffic levels would extend beyond a period longer than 12 months. The method of tunnel construction does not change the impact upon this link.	**Negligible - Not Significant**
12	A5152	Between A55 J7 and A5.	Low	Low	Very Low	Low	Low	Primary = Negligible	This link would be used by tunnel construction traffic. For the TBM method, a higher peak week is noted. For the drill and blast method, peak week traffic is reduced. However, average weekly traffic over the peak year of construction activity is higher. It is considered that the residual effect is consistent for both methods of tunnelling.	**Negligible - Not Significant**
13	A5	A5 between A5152 and A55 J7a.	Low	Low	Low	Low	Low	Primary = Negligible	This link would be used by tunnel construction traffic. For the TBM method, a higher peak week is noted. For the drill and blast method, peak week traffic is reduced. However, average weekly traffic over the peak year of construction activity is higher. It is considered that the residual effect is consistent for both methods of tunnelling.	**Negligible - Not Significant**
14	NCR8	Between A5 and access E7	Medium	High	Medium	High	Medium	Primary = Major Secondary = Moderate	This link is identified as a contingency route for Tunnel construction activity in the event Link 15 were unavailable. The forecast levels of traffic assessed would be unlikely to be experienced. The finding of moderate significance is for the average traffic over the peak year including tunnelling activity. Due to its designation as a contingency route for	**Minor - Not Significant**

Table 13.27: Severance Assessment with Residual Effects

Link Reference	Link	Description	Link Sensitivity	Magnitude of Effect				Assessments used and calculated effects	Additional Commentary to reach Final Residual Effect	Final Residual Effect
				OHL + TBM		OHL + Drill and Blast				
				Primary	Secondary	Primary	Secondary			
									tunnel traffic, it is considered that the effects would be less than those calculated as the traffic associated with OHL construction only on this link is based around sporadic periods of activity at noticeably reduced levels. Using the OHL calculation indicates a Minor effect consistent with the Final Residual Effect.	
15	Pont Rhonwy Link (PRL)	PRL between A5 and access F1	Low	High	High	High	High	Primary = Moderate Secondary = Moderate	Link 15 would serve as the key route for Tunnel construction traffic. It is proposed in the OCTMP (**Document 7.5**) that this link would be closed for the duration of the construction works. Whilst the lack of built environment indicators have led to a designation of low sensitivity, the closure of this route would have a higher effect than that caused only by changes in traffic volumes. The duration of activity experienced on this link, coupled with the proposed closure, lead to a conclusion that the effect could be worse than the calculated effect.	**Major - Significant**
16	A4080	A4080 between A5 at tollgate and F2.	Medium	Low	Low	Low	Low	Primary = Minor	This link is identified as a contingency route for Tunnel construction activity in the event Link 15 were unavailable. The forecast levels of traffic assessed would be unlikely to be experienced. The finding of minor significance is for the primary peak week assessment. Due to its designation as a contingency route for tunnel traffic, it is considered that the effects would be less than those calculated as the traffic associated with site setup and enabling works is based around noticeably reduced levels in comparison to the volumes assessed which assumes that all activity would route along this link.	**Minor - Not Significant**
17	A5	A5 Between A55 J8a and A4080	Medium	Low	Very Low	Low	Low	Primary = Minor	This link is identified as a contingency route for Tunnel construction activity in the event that Link 15 were unavailable. The forecast levels of traffic assessed would be unlikely to be experienced. The finding of minor significance is for the primary peak week assessment. Due to its designation as a contingency route for tunnel traffic, it is considered that the effects would be less than those calculated as the traffic associated with site setup and enabling works is based around noticeably reduced levels in	**Minor - Not Significant**

Table 13.27: Severance Assessment with Residual Effects

Link Reference	Link	Description	Link Sensitivity	Magnitude of Effect				Assessments used and calculated effects	Additional Commentary to reach Final Residual Effect	Final Residual Effect
				OHL + TBM		OHL + Drill and Blast				
				Primary	Secondary	Primary	Secondary			
									comparison to the volumes assessed which assumes that all activity would route along this link. .	
18	A487	A487 Between B4547 and A55 J9.	Low	Low	Very Low	Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
18.1	A4087	A4087 Between A55 J10 and A487	Low	Low	Low	Low	Very Low	Primary = Negligible	Identified as a contingency route. Forecast levels of traffic assessed would be unlikely to be experienced.	**Negligible - Not Significant**
19	B4547	B4547 between A4244 and A487.	Low	Medium	Low	Medium	Low	Primary = Minor		**Minor - Not Significant**
20	A4244	A4244/A5 between B4547 And A55 J11	Medium	Low	Low	Low	Low	Primary = Minor		**Minor - Not Significant**
21	A55	Britannia Bridge between A55 J9 and A55 J8a	Low	Low	Very Low	Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
22	B5109	B5109 between LLR and access D2	High	Very Low	Very Low	Very Low	Very Low	Primary = Minor		**Minor - Not Significant**
23	Ffordd y Felin	Ffordd y Felin between A5025 and Brynddu Road	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**

Table 13.27: Severance Assessment with Residual Effects

Link Reference	Link	Description	Link Sensitivity	Magnitude of Effect				Assessments used and calculated effects	Additional Commentary to reach Final Residual Effect	Final Residual Effect
				OHL + TBM		OHL + Drill and Blast				
				Primary	Secondary	Primary	Secondary			
24	B5110	B5110 between access C8 and UR 19	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
25	Brynddu Road	Brynddu Road Between Fordd y Felin and access B2	Low	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
26	B5112	B5112 between A55 J5 and B5111	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
27	UR 1	UR 1 between Brynddu Road and UR 4	Medium	Low	Very Low	Low	Very Low	Primary = Minor		**Minor - Not Significant**
28	UR 8	UR8 between B5111 and access B11	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
29	UR 9	UR9 between B5111 and access C2	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
30	Fodolydd Lane	Fodolydd Lane between B4547 and access F3	Low	High	High	High	High	Primary = Moderate Secondary = Moderate	Link Ref 30 would serve as an alternative route for LGVs to the preferred route for tunnelling activity via the A4244 and access F14. The levels of traffic included in the assessment would result in a moderate significant effect being calculated. The following factors should be considered in concluding the overall residual effect; minimal levels of baseline traffic (c200 veh /week), a preference to use	**Minor - Not Significant**

Table 13.27: Severance Assessment with Residual Effects

Link Reference	Link	Description	Link Sensitivity	Magnitude of Effect				Assessments used and calculated effects	Additional Commentary to reach Final Residual Effect	Final Residual Effect
				OHL + TBM		OHL + Drill and Blast				
				Primary	Secondary	Primary	Secondary			
									alternative routes in the OCTMP (**Document 7.**5) and the consideration of tunnelling scenario 2. The effect would be reduced in tunnelling scenario 1 and scenario 3 and through any reallocation of construction traffic to more preferred routes. As a result the residual effect would be reduced.	
31	UR 10	UR10 between B5111 and access C4	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
32	UR 16	UR 16 between B5420 and access E1	Low	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
33	UR 19	UR 19 between B5110 and access C6	Medium	Low	Very Low	Low	Very Low	Primary = Minor		**Minor - Not Significant**
34	Fodolydd Lane	Fodolydd Lane between B4547 and access F7 (enabling works only)	Low	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
35	UR 3	UR 3 between Brynddu Road and access A9	Low	Low	Very Low	Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
36	North of J7	North of J7 between A55 and access E5A	Low	High	Medium	High	Medium	Primary = Moderate Secondary = Minor		**Minor - Not Significant**

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9.4.2 In summary there is one link (Link Ref 15) found to have a **Major, Significant** Final Residual Effect for Severance. There are no links found to have a **Moderate, Significant** Final Residual Effect. There are 40 links found to have Minor or **Negligible, Not Significant** Final Residual Effects.

9.5 PEDESTRIAN DELAY

Pedestrian Delay - Primary and Secondary Assessment

9.5.1 Table 13.28 presents the full results of the Primary and Secondary Pedestrian Delay assessments. The table reports the link sensitivity and the magnitude of effect for both the primary and secondary assessments, and for both the TBM and the Drill and Blast scenarios. Following this a commentary is provided, which sets out the factors that have been taken into account in reaching a conclusion as to the residual effect, which is reported in the final column.

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Table 13.28: Pedestrian Delay Assessment with Residual Effects

Link Reference	Link	Description	Link Sensitivity	Magnitude of Effect				Assessments used and calculated effects	Additional Commentary to reach Final Residual Effect	Final Residual Effect
				OHL + TBM		OHL + Drill and Blast				
				Primary	Secondary	Primary	Secondary			
1	A5025	A5025 between A5 at Valley Crossroads and Wylfa.	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
2	A5	A5 between A55 J3 and Valley Crossroads .	Low	Low	Low	Low	Low	Primary = Negligible		**Negligible - Not Significant**
3	UR 4	UR 4 between B5111 and B2	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
4	B5111	B5111 between B5110 and B5112	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
4.1	B5111	B5111 between the B5112 and access B8	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
5	B5110	B5110 between Llangefni and access C8.	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
6	B5420	B5420 between LLR and B5110	Medium	Low	Low	Low	Low	Primary = Minor		**Minor - Not Significant**

Table 13.28: Pedestrian Delay Assessment with Residual Effects

Link Reference	Link	Description	Link Sensitivity	Magnitude of Effect				Assessments used and calculated effects	Additional Commentary to reach Final Residual Effect	Final Residual Effect
				OHL + TBM		OHL + Drill and Blast				
				Primary	Secondary	Primary	Secondary			
7	B5420	Between Llangefni Link Road and Access D4	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
7.1	B5420a	Between Access D4 and Crosses Roundabout.	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
8	A5114	Between A55 J6 Llangefni Link Road.	Low	Low	Low	Low	Low	Primary = Negligible		**Negligible - Not Significant**
8.1	Industrial Estate Road	Between A5114 via existing carriageway to Llangefni Link Road	Medium	Low	Low	Low	Low	Primary = Minor	This is a contingency route for OHL traffic, in the event that link 8.2 were unavailable. The forecast levels of traffic are therefore unlikely to be experienced. The finding of minor significance is for the average traffic over the peak year. It is not anticipated that the peak year traffic levels would extend beyond a period longer than 12 months. The method of tunnel construction does not change the impact upon this link.	**Negligible - Not Significant**
8.2	Llangefni Link Road (LLR)	LLR between Llangefni Industrial Estate and the B5420.	Low	Low	Low	Low	Low	Primary = Negligible		**Negligible - Not Significant**
9	A5025	A5025 between A55 J8 to B5420.	Low	Low	Low	Low	Low	Primary = Negligible		**Negligible - Not Significant**

Table 13.28: Pedestrian Delay Assessment with Residual Effects

Link Reference	Link	Description	Link Sensitivity	Magnitude of Effect				Assessments used and calculated effects	Additional Commentary to reach Final Residual Effect	Final Residual Effect
				OHL + TBM		OHL + Drill and Blast				
				Primary	Secondary	Primary	Secondary			
11	UR 21	Unnamed Road between Star and access E5.	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
11.1	Unnamed Road 21	UR between Star Crossroads and Unnamed Road Star	Low	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
12	A5152	Between A55 J7 and A5.	Low	Low	Low	Low	Low	Primary = Negligible		**Negligible - Not Significant**
13	A5	A5 between A5152 and A55 J7a.	Low	Low	Low	Low	Low	Primary = Negligible		**Negligible - Not Significant**
14	NCR8	Between A5 and access E7	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
15	Pont Rhonwy Link (PRL)	PRL between A5 and access F1	Low	Very Low	Very Low	Very Low	Very Low	Primary = Negligible	Link 15 would serve as the key route for Tunnel construction traffic. It is proposed in the OCTMP (**Document 7.5**) that this link would be closed for the duration of the construction works. Whilst the lack of built environment indicators have led to a designation of low sensitivity, this route in known to be used by pedestrians and cyclists for recreation, despite the lack of formal pedestrian and cycle infrastructure (i.e. footway and cycle ways). The closure of this link would impact on pedestrians and cyclists and this would increase pedestrian delay effect on the link. Whilst it would still be possible for pedestrians to use sections of the link there would be no through connection with alternative routes likely to increase journey times to local amenities.	**Moderate - Significant**

Table 13.28: Pedestrian Delay Assessment with Residual Effects

Link Reference	Link	Description	Link Sensitivity	Magnitude of Effect				Assessments used and calculated effects	Additional Commentary to reach Final Residual Effect	Final Residual Effect
				OHL + TBM		OHL + Drill and Blast				
				Primary	Secondary	Primary	Secondary			
16	A4080	A4080 between A5 at tollgate and F2.	Medium	Low	Low	Low	Low	Primary = Minor		**Minor - Not Significant**
17	A5	A5 Between A55 J8a and A4080	Medium	Low	Low	Low	Low	Primary = Minor		**Minor - Not Significant**
18	A487	A487 Between B4547 and A55 J9.	Low	Low	Low	Low	Low	Primary = Negligible		**Negligible - Not Significant**
18.1	A4087	A4087 Between A55 J10 and A487	Low	Low	Low	Low	Low	Primary = Negligible		**Negligible - Not Significant**
19	B4547	B4547 between A4244 and A487.	Low	Low	Low	Low	Low	Primary = Negligible		**Negligible - Not Significant**
20	A4244	A4244/A5 between B4547 And A55 J11	Medium	Low	Low	Low	Low	Primary = Minor		**Minor - Not Significant**
21	A55	Britannia Bridge between A55 J9 and A55 J8a	Low	Low	Low	Low	Low	Primary = Negligible		**Negligible - Not Significant**
22	B5109	B5109 between LLR and access D2	High	Very Low	Very Low	Very Low	Very Low	Primary = Minor		**Minor - Not Significant**

Table 13.28: Pedestrian Delay Assessment with Residual Effects

Link Reference	Link	Description	Link Sensitivity	Magnitude of Effect				Assessments used and calculated effects	Additional Commentary to reach Final Residual Effect	Final Residual Effect
				OHL + TBM		OHL + Drill and Blast				
				Primary	Secondary	Primary	Secondary			
23	Ffordd y Felin	Ffordd y Felin between A5025 and Brynddu Road	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
24	B5110	B5110 between access C8 and UR 19	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
25	Brynddu Road	Brynddu Road Between Fordd y Felin and access B2	Low	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
26	B5112	B5112 between A55 J5 and B5111	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
27	UR 1	UR 1 between Brynddu Road and UR 4	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
28	UR 8	UR8 between B5111 and access B11	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
29	UR 9	UR9 between B5111 and access C2	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**

Table 13.28: Pedestrian Delay Assessment with Residual Effects

Link Reference	Link	Description	Link Sensitivity	Magnitude of Effect				Assessments used and calculated effects	Additional Commentary to reach Final Residual Effect	Final Residual Effect
				OHL + TBM		OHL + Drill and Blast				
				Primary	Secondary	Primary	Secondary			
30	Fodolydd Lane	Fodolydd Lane between B4547 and access F3	Low	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
31	UR 10	UR10 between B5111 and access C4	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
32	UR 16	UR 16 between B5420 and access E1	Low	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
33	UR 19	UR 19 between B5110 and access C6	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
34	Fodolydd Lane	Fodolydd Lane between B4547 and access F7 (enabling works only)	Low	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
35	UR 3	UR 3 between Brynddu Road and access A9	Low	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
36	North of J7	North of J7 between A55 and access E5A	Low	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**

9.5.3 In summary there is one link (Link Ref 15) found to have a **Moderate, Significant** Final Residual Effect for Pedestrian Delay. There are 40 links found to have Minor or **Negligible, Not Significant** Pedestrian Delay Effects.

9.6 PEDESTRIAN AMENITY

Pedestrian Amenity - Primary and Secondary Assessment

9.6.1 Table 13.29 presents the full results of the Primary and Secondary Pedestrian Amenity assessments. The table reports the link sensitivity and the magnitude of effect for both the primary and secondary assessments, and for both the TBM and the Drill and Blast scenarios. Following this a commentary is provided, which sets out the factors that have been taken into account in reaching a conclusion as to the residual effect, which is reported in the final column.

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Table 13.29: Pedestrian Amenity Assessment with Residual Effects

Link Ref	Highway Link	Description	Link Sensitivity	Magnitude of Effect				Assessments used and calculated effects	Additional Commentary to reach Final Residual Effect	Final Residual Effect
				OHL + TBM		OHL + Drill and Blast				
				Primary	Secondary	Primary	Secondary			
1	A5025	A5025 between A5 at Valley Crossroads and Wylfa.	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
2	A5	A5 between A55 J3 and Valley Crossroads.	Low	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
3	UR 4	UR 4 between B5111 and B2	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
4	B5111	B5111 between B5110 and B5112	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
4.1	B5111	B5111 between the B5112 and access B8	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
5	B5110	B5110 between Llangefni and access C8.	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
6	B5420	B5420 between LLR and B5110	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
7	B5420	Between Llangefni Link Road and Access D4	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
7.1	B5420a	Between Access D4 and	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**

Table 13.29: Pedestrian Amenity Assessment with Residual Effects

Link Ref	Highway Link	Description	Link Sensitivity	Magnitude of Effect				Assessments used and calculated effects	Additional Commentary to reach Final Residual Effect	Final Residual Effect
				OHL + TBM		OHL + Drill and Blast				
				Primary	Secondary	Primary	Secondary			
		Crosses Roundabout.								
8	A5114	Between A55 J6 Llangefni Link Road.	Low	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
8.1	Industrial Estate Road	Between A5114 via existing carriageway to Llangefni Link Road	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
8.2	Llangefni Link Road (LLR)	LLR between Llangefni Industrial Estate and the B5420.	Low	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
9	A5025	A5025 between A55 J8 to B5420.	Low	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
11	UR 21	Unnamed Road between Star and access E5.	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
11.1	Unnamed Road 21	UR between Star Crossroads and Unnamed Road Star	Low	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
12	A5152	Between A55 J7 and A5.	Low	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
13	A5	A5 between A5152 and A55 J7a.	Low	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**

Table 13.29: Pedestrian Amenity Assessment with Residual Effects

Link Ref	Highway Link	Description	Link Sensitivity	Magnitude of Effect				Assessments used and calculated effects	Additional Commentary to reach Final Residual Effect	Final Residual Effect
				OHL + TBM		OHL + Drill and Blast				
				Primary	Secondary	Primary	Secondary			
14	NCR8	Between A5 and access E7	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
15	Pont Rhonwy Link (PRL)	PRL between A5 and access F1	Low	Very Low	Very Low	Very Low	Very Low	Primary = Negligible	Link 15 would serve as the key route for Tunnel construction traffic. It is proposed in the OCTMP (**Document 7.5**) that this link would be closed for the duration of the construction works. Whilst the lack of built environment indicators have led to a designation of low sensitivity, this route is known to be used by pedestrians and cyclists for recreation and amenity, despite the lack of formal pedestrian and cycle infrastructure (i.e. footway and cycle ways). The closure of this link would impact on pedestrians and cyclists, would reduce the pedestrian amenity on the link and increase the effect. Whilst it would still be possible for pedestrians to use sections of the link there would be no through connection.	**Moderate - Significant**
16	A4080	A4080 between A5 at tollgate and F2.	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
17	A5	A5 Between A55 J8a and A4080	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
18	A487	A487 Between B4547 and A55 J9.	Low	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
18.1	A4087	A4087 Between A55 J10 and A487	Low	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**

Table 13.29: Pedestrian Amenity Assessment with Residual Effects

Link Ref	Highway Link	Description	Link Sensitivity	Magnitude of Effect				Assessments used and calculated effects	Additional Commentary to reach Final Residual Effect	Final Residual Effect
				OHL + TBM		OHL + Drill and Blast				
				Primary	Secondary	Primary	Secondary			
19	B4547	B4547 between A4244 and A487.	Low	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
20	A4244	A4244/A5 between B4547 And A55 J11	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
21	A55	Britannia Bridge between A55 J9 and A55 J8a	Low	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
22	B5109	B5109 between LLR and access D2	High	Very Low	Very Low	Very Low	Very Low	Primary = Minor		**Minor - Not Significant**
23	Ffordd y Felin	Ffordd y Felin between A5025 and Brynddu Road	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
24	B5110	B5110 between access C8 and UR 19	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
25	Brynddu Road	Brynddu Road Between Fordd y Felin and access B2	Low	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
26	B5112	B5112 between A55 J5 and B5111	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**

Table 13.29: Pedestrian Amenity Assessment with Residual Effects

Link Ref	Highway Link	Description	Link Sensitivity	Magnitude of Effect				Assessments used and calculated effects	Additional Commentary to reach Final Residual Effect	Final Residual Effect
				OHL + TBM		OHL + Drill and Blast				
				Primary	Secondary	Primary	Secondary			
27	UR 1	UR 1 between Brynddu Road and UR 4	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
28	UR 8	UR8 between B5111 and access B11	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
29	UR 9	UR9 between B5111 and access C2	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
30	Fodolydd Lane	Fodolydd Lane between B4547 and access F3	Low	High	High	High	High	Primary = Moderate Secondary = Moderate	Link Ref 30 serves as an alternative route for LGVs to the preferred route for tunnelling activity via the A4244 and access F14. The levels of traffic included in the assessment result in a moderate significant effect being calculated. The following factors should be considered in concluding the overall residual effect; minimal levels of baseline traffic (c200 veh /week), a preference to use alternative routes in the OCTMP (**Document 7.5**) and the consideration of tunnelling scenario 2. The effect would be reduced in tunnelling scenario 1 and scenario 3 and through any reallocation of construction traffic to more preferred routes. The route would remain open for pedestrian access and as a consequence pedestrian amenity would not be compromised. As a result the residual effect would be reduced.	**Negligible - Not Significant**
31	UR 10	UR10 between B5111 and access C4	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
32	UR 16	UR 16 between	Low	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**

Table 13.29: Pedestrian Amenity Assessment with Residual Effects

Link Ref	Highway Link	Description	Link Sensitivity	Magnitude of Effect				Assessments used and calculated effects	Additional Commentary to reach Final Residual Effect	Final Residual Effect
				OHL + TBM		OHL + Drill and Blast				
				Primary	Secondary	Primary	Secondary			
		B5420 and access E1								
33	UR 19	UR 19 between B5110 and access C6	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
34	Fodolydd Lane	Fodolydd Lane between B4547 and access F7 (enabling works only)	Low	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
35	UR 3	UR 3 between Brynddu Road and access A9	Low	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
36	North of J7	North of J7 between A55 and access E5A	Low	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**

9.6.2 In summary there is one link (Link Ref 15) found to have a **Moderate, Significant** Final Residual Effect for Pedestrian Amenity. There are 40 links found to have Minor or **Negligible, Not Significant** Final Residual Effects

9.7 FEAR AND INTIMIDATION

Fear and Intimidation - Primary and Secondary Assessment

9.7.1 Table 13.30 presents the full results of the Primary and Secondary Fear and Intimidation assessments. The table reports the link sensitivity and the magnitude of effect for both the primary and secondary assessments, and for both the TBM and the Drill and Blast scenarios. Following this a commentary is provided, which sets out the factors that have been taken into account in reaching a conclusion as to the residual effect, which is reported in the final column.

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Table 13.30: Fear and Intimidation Assessment with Residual Effects

Link Ref	Link	Description	Link Sensitivity	Magnitude of Effects				Assessments used and calculated effects	Additional Commentary to reach Final Residual Effect	Final Residual Effect
				OHL + TBM		OHL + Drill and Blast				
				Primary	Secondary	Primary	Secondary			
1	A5025	A5025 between A5 at Valley Crossroads and Wylfa.	Medium	Medium	Low	Medium	Low	Primary = Moderate Secondary = Minor	The finding of minor significance is for the average traffic over the peak year. It is not anticipated that the peak year traffic levels would extend beyond a period longer than 12 months. The method of tunnel construction does not change the impact upon this link.	**Minor - Not Significant**
2	A5	A5 between A55 J3 and Valley Crossroads	Low	Low	Very Low	Low	Very Low	Primary = Negligible	The finding of negligible significance is for the primary peak week assessment. It is not anticipated peak week traffic levels would extend beyond four weeks. The method of tunnel construction does not change the impact upon this link.	**Negligible - Not Significant**
3	UR 4	UR 4 between B5111 and B2	Medium	High	Low	High	Low	Primary = Major Secondary = Minor	The finding of minor significance is for the average traffic over the peak year. It is not anticipated that the peak year traffic levels would extend beyond a period longer than 12 months. The method of tunnel construction does not change the impact upon this link.	**Minor - Not Significant**
4	B5111	B5111 between B5110 and B5112	Medium	High	Low	High	Low	Primary = Major Secondary = Minor	The finding of minor significance is for the average traffic over the peak year. It is not anticipated that the peak year traffic levels would extend beyond a period longer than 12 months. The method of tunnel construction does not change the impact upon this link.	**Minor - Not Significant**
4.1	B5111	B5111 between the B5112 and access B8	Medium	High	Low	High	Low	Primary = Major Secondary = Minor	The finding of minor significance is for the average traffic over the peak year. It is not anticipated that the peak year traffic levels would extend beyond a period longer than 12 months. The method of tunnel construction does not change the impact upon this link.	**Minor - Not Significant**
5	B5110	B5110 between Llangefni and access C8.	Medium	Medium	Low	Medium	Low	Primary = Moderate Secondary = Minor	The finding of minor significance is for the average traffic over the peak year. It is not anticipated that the peak year traffic levels would extend beyond a period longer than 12 months. The method of tunnel construction does not change the impact upon this link.	**Minor - Not Significant**
6	B5420	B5420 between LLR and B5110	Medium	Medium	Low	Medium	Low	Primary = Moderate Secondary = Minor	The finding of minor significance is for the average traffic over the peak year. It is not anticipated that the peak year traffic levels would extend beyond a period longer than 12 months. The method of tunnel construction does not change the impact upon this link.	**Minor - Not Significant**

Table 13.30: Fear and Intimidation Assessment with Residual Effects

Link Ref	Link	Description	Link Sensitivity	Magnitude of Effects				Assessments used and calculated effects	Additional Commentary to reach Final Residual Effect	Final Residual Effect
				OHL + TBM		OHL + Drill and Blast				
				Primary	Secondary	Primary	Secondary			
7	B5420	Between Llangefni Link Road and Access D4	Medium	Medium	Low	Medium	Low	Primary = Moderate Secondary = Minor	The finding of minor significance is for the average traffic over the peak year. It is not anticipated that the peak year traffic levels would extend beyond a period longer than 12 months. The method of tunnel construction does not change the impact upon this link.	**Minor - Not Significant**
7.1	B5420a	Between Access D4 and Crosses Roundabout.	Medium	Medium	Low	Medium	Low	Primary = Moderate Secondary = Minor	This is a contingency route for OHL traffic, in the event that link 7 were unavailable. The forecast levels of traffic are therefore unlikely to be experienced. The finding of minor significance is for the average traffic over the peak year. It is not anticipated that the peak year traffic levels would extend beyond a period longer than 12 months. The method of tunnel construction does not change the impact upon this link.	**Negligible - Not Significant**
8	A5114	Between A55 J6 Llangefni Link Road.	Low	Low	Very Low	Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
8.1	Industrial Estate Road	Between A5114 via existing carriageway to Llangefni Link Road	Medium	Medium	Low	Medium	Low	Primary = Moderate Secondary = Minor	This is a contingency route for OHL traffic, in the event that link 8.2 were unavailable. The forecast levels of traffic are therefore unlikely to be experienced. The finding of minor significance is for the average traffic over the peak year. It is not anticipated that the peak year traffic levels would extend beyond a period longer than 12 months. The method of tunnel construction does not change the impact upon this link.	**Negligible - Not Significant**
8.2	Llangefni Link Road (LLR)	LLR between Llangefni Industrial Estate and the B5420.	Low	Medium	Low	Medium	Low	Primary = Minor		**Minor - Not Significant**
9	A5025	A5025 between A55 J8 to B5420.	Low	Low	Very Low	Low	Very Low	Primary = Negligible	This is a contingency route for OHL traffic, if primary routes are unavailable. The forecast levels of traffic are therefore unlikely to be experienced.	**Negligible - Not Significant**

Table 13.30: Fear and Intimidation Assessment with Residual Effects

Link Ref	Link	Description	Link Sensitivity	Magnitude of Effects				Assessments used and calculated effects	Additional Commentary to reach Final Residual Effect	Final Residual Effect
				OHL + TBM		OHL + Drill and Blast				
				Primary	Secondary	Primary	Secondary			
11	UR 21	Unnamed Road between Star and access E5.	Medium	High	Low	High	Low	Primary = Major Secondary = Minor	The finding of minor significance is for the average traffic over the peak year. It is not anticipated that the peak year traffic levels would extend beyond a period longer than 12 months. The method of tunnel construction does not change the impact upon this link.	**Minor - Not Significant**
11.1	Unnamed Road 21	UR between Star Crossroads and Unnamed Road Star	Low	High	Low	High	Low	Primary = Moderate Secondary = Negligible	The finding of negligible significance is for the average traffic over the peak year. It is not anticipated that the peak year traffic levels would extend beyond a period longer than 12 months. The method of tunnel construction does not change the impact upon this link.	**Negligible - Not Significant**
12	A5152	Between A55 J7 and A5.	Low	Low	Very Low	Low	Low	Primary = Negligible	This link would be used by tunnel construction traffic. For the TBM method, a higher peak week is noted. For the drill and blast method, peak week traffic is reduced. However, average weekly traffic over the peak year of vehicle movements is higher. It is considered that the residual effect is consistent for both methods of tunnelling.	**Negligible - Not Significant**
13	A5	A5 between A5152 and A55 J7a.	Low	Low	Low	Low	Low	Primary = Negligible	This link would be used by tunnel construction traffic. For the TBM method, a higher peak week is noted. For the drill and blast method, peak week traffic is reduced. However, average weekly traffic over the peak year of vehicle movements is higher. It is considered that the residual effect is consistent for both methods of tunnelling.	**Negligible - Not Significant**
14	NCR8	Between A5 and access E7	Medium	High	Medium	High	Medium	Primary = Major Secondary = Moderate	This link is identified as a contingency route for Tunnel construction activity in the event Link 15 were unavailable. The forecast levels of traffic assessed would be unlikely to be experienced. The finding of moderate significance is for the average traffic over the peak year including tunneling activity. Due to its designation as a contingency route for tunnel traffic, it is considered that the effects would be less than those calculated as the traffic associated with OHL construction only on this link is based around sporadic periods of activity at noticeably reduced levels. Using the OHL calculation provides a Minor effect consistent with the Final Residual Effect.	**Minor - Not Significant**

Table 13.30: Fear and Intimidation Assessment with Residual Effects

Link Ref	Link	Description	Link Sensitivity	Magnitude of Effects				Assessments used and calculated effects	Additional Commentary to reach Final Residual Effect	Final Residual Effect
				OHL + TBM		OHL + Drill and Blast				
				Primary	Secondary	Primary	Secondary			
15	Pont Rhonwy Link (PRL)	PRL between A5 and access F1	Low	High	High	High	High	Primary = Moderate Secondary = Moderate	Link 15 would serve as the key route for Tunnel construction traffic. It is proposed in the OCTMP (**Document 7.5**) that this link would be closed for the duration of the construction works. Whilst the lack of built environment indicators have led to a designation of low sensitivity, however, this route in known to be used by pedestrians and cyclists for recreation. The closure of this link would impact on pedestrians and cyclists, however, this would eliminate any fear and intimidation effects that could be experienced now.	**Minor - Not Significant**
16	A4080	A4080 between A5 at tollgate and F2.	Medium	Low	Low	Low	Low	Primary = Minor	This link is identified as a contingency route for Tunnel construction activity in the event that Link 15 were unavailable. The forecast levels of traffic assessed would be unlikely to be experienced. The finding of minor significance is for the primary peak week assessment. Due to its designation as a contingency route for tunnel traffic, it is considered that the effects would be less than those calculated as the traffic associated with site setup and enabling works is based around noticeably reduced levels in comparison to the volumes assessed which assumes that all activity would route along this link.	**Minor - Not Significant**
17	A5	A5 Between A55 J8a and A4080	Medium	Low	Very Low	Low	Low	Primary = Minor	This link is identified as a contingency route for Tunnel construction activity in the event that Link 15 were unavailable. The forecast levels of traffic assessed would be unlikely to be experienced. The finding of minor significance is for the primary peak week assessment. Due to its designation as a contingency route for tunnel traffic, it is considered that the effects would be less than those calculated as the traffic associated with site setup and enabling works is based around noticeably reduced levels in comparison to the volumes assessed which assumes that all activity would route along this link.	**Minor - Not Significant**
18	A487	A487 Between B4547 and A55 J9.	Low	Low	Very Low	Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
18.1	A4087	A4087 Between A55 J10 and A487	Low	Low	Low	Low	Very Low	Primary = Negligible	Identified as a contingency route. Forecast levels of traffic assessed are unlikely to be experienced.	**Negligible - Not Significant**

Table 13.30: Fear and Intimidation Assessment with Residual Effects

Link Ref	Link	Description	Link Sensitivity	Magnitude of Effects				Assessments used and calculated effects	Additional Commentary to reach Final Residual Effect	Final Residual Effect
				OHL + TBM		OHL + Drill and Blast				
				Primary	Secondary	Primary	Secondary			
19	B4547	B4547 between A4244 and A487.	Low	Medium	Low	Medium	Low	Primary = Minor		**Minor - Not Significant**
20	A4244	A4244/A5 between B4547 And A55 J11	Medium	Low	Low	Low	Low	Primary = Minor		**Minor - Not Significant**
21	A55	Britannia Bridge between A55 J9 and A55 J8a	Low	Low	Very Low	Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
22	B5109	B5109 between LLR and access D2	High	Very Low	Very Low	Very Low	Very Low	Primary = Minor		**Minor - Not Significant**
23	Ffordd y Felin	Ffordd y Felin between A5025 and Brynddu Road	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
24	B5110	B5110 between access C8 and UR 19	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
25	Brynddu Road	Brynddu Road Between Fordd y Felin and access B2	Low	Very Low	Very Low	Very Low	Very Low	Primary= Negligible		**Negligible - Not Significant**

Table 13.30: Fear and Intimidation Assessment with Residual Effects

Link Ref	Link	Description	Link Sensitivity	Magnitude of Effects				Assessments used and calculated effects	Additional Commentary to reach Final Residual Effect	Final Residual Effect
				OHL + TBM		OHL + Drill and Blast				
				Primary	Secondary	Primary	Secondary			
26	B5112	B5112 between A55 J5 and B5111	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
27	UR 1	UR 1 between Brynddu Road and UR 4	Medium	Low	Very Low	Low	Very Low	Primary = Minor		**Minor - Not Significant**
28	UR 8	UR8 between B5111 and access B11	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
29	UR 9	UR9 between B5111 and access C2	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
30	Fodolydd Lane	Fodolydd Lane between B4547 and access F3	Low	High	High	High	High	Primary = Moderate Secondary = Moderate	Link Ref 30 serves as an alternative route for LGVs to the preferred route for tunnelling activity via the A4244 and access F14. The levels of traffic included in the assessment result in a moderate significant effect being calculated. The following factors should be considered in concluding the overall residual effect; minimal levels of baseline traffic (c200 veh /week), a preference to use alternative routes in the OCTMP (**Document 7.5**) and the consideration of tunnelling scenario 2. The effect would be reduced in tunnelling scenario 1 and scenario 3 and through any reallocation of construction traffic to more preferred routes. As a result the residual effect would be reduced.	**Minor - Not Significant**
31	UR 10	UR10 between B5111 and access C4	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
32	UR 16	UR 16 between	Low	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**

Table 13.30: Fear and Intimidation Assessment with Residual Effects

Link Ref	Link	Description	Link Sensitivity	Magnitude of Effects				Assessments used and calculated effects	Additional Commentary to reach Final Residual Effect	Final Residual Effect
				OHL + TBM		OHL + Drill and Blast				
				Primary	Secondary	Primary	Secondary			
		B5420 and access E1								
33	UR 19	UR 19 between B5110 and access C6	Medium	Low	Very Low	Low	Very Low	Primary = Minor		**Minor - Not Significant**
34	Fodolydd Lane	Fodolydd Lane between B4547 and access F7 (enabling works only)	Low	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
35	UR 3	UR 3 between Brynddu Road and access A9	Low	Low	Very Low	Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
36	North of J7	North of J7 between A55 and access E5A	Low	High	Medium	High	Medium	Primary = Moderate Secondary = Minor		**Minor - Not Significant**

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9.7.4 In summary there are no links Significant Final Residual Effect for Fear and Intimidation. There are 41 links found to have Minor or **Negligible, Not Significant** Final Residual Effects.

9.8 DRIVER DELAY

Driver Delay - Primary and Secondary Assessment

9.8.1 Table 13.31 presents the full results of the Primary and Secondary Driver Delay assessments. The table reports the link sensitivity and the magnitude of effect for both the primary and secondary assessments, and for both the TBM and the Drill and Blast scenarios. Following this a commentary is provided, which sets out the factors that have been taken into account in reaching a conclusion as to the residual effect, which is reported in the final column.

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Table 13.31: Driver Delay Assessment with Residual Effects

Link Ref	Link	Description	Link Sensitivity	Magnitude of Effect				Assessments used and calculated effects	Additional Commentary to reach Final Residual Effect	Final Residual Effect
				OHL + TBM		OHL + Drill and Blast				
				Primary	Secondary	Primary	Secondary			
1	A5025	A5025 between A5 at Valley Crossroads and Wylfa.	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
2	A5	A5 between A55 J3 and Valley Crossroads.	Low	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
3	UR 4	UR 4 between B5111 and B2	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
4	B5111	B5111 between B5110 and B5112	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
4.1	B5111	B5111 between the B5112 and access B8	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
5	B5110	B5110 between Llangefni and access C8.	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
6	B5420	B5420 between LLR and B5110	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
7	B5420	Between Llangefni Link Road and Access D4	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
7.1	B5420a	Between Access D4 and Crosses Roundabout.	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
8	A5114	Between A55 J6 Llangefni Link Road.	Low	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**

Table 13.31: Driver Delay Assessment with Residual Effects

Link Ref	Link	Description	Link Sensitivity	Magnitude of Effect				Assessments used and calculated effects	Additional Commentary to reach Final Residual Effect	Final Residual Effect
				OHL + TBM		OHL + Drill and Blast				
				Primary	Secondary	Primary	Secondary			
8.1	Industrial Estate Road	Between A5114 via existing carriageway to Llangefni Link Road	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
8.2	Llangefni Link Road (LLR)	LLR between Llangefni Industrial Estate and the B5420.	Low	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
9	A5025	A5025 between A55 J8 to B5420.	Low	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
11	UR 21	Unnamed Road between Star and access E5.	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
11.1	Unnamed Road 21	UR between Star Crossroads and Unnamed Road Star	Low	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
12	A5152	Between A55 J7 and A5.	Low	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
13	A5	A5 between A5152 and A55 J7a.	Low	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
14	NCR8	Between A5 and access E7	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
15	Pont Rhonwy Link (PRL)	PRL between A5 and access F1	Low	Low	Very Low	Low	Very Low	Primary = Negligible	Link 15 would serve as the key route for Tunnel construction traffic. It is proposed in the OCTMP (**Document 7.5**) that this link would be closed for the duration of the construction works. Whilst the lack of built environment indicators have led to a designation of low sensitivity however, this route is known to be used by motorists for local access and as a through route. Whilst residential access would be retained,	**Moderate - Significant**

Table 13.31: Driver Delay Assessment with Residual Effects

Link Ref	Link	Description	Link Sensitivity	Magnitude of Effect				Assessments used and calculated effects	Additional Commentary to reach Final Residual Effect	Final Residual Effect
				OHL + TBM		OHL + Drill and Blast				
				Primary	Secondary	Primary	Secondary			
									the closure of the link as a through route would increase journey times resulting in an increased driver delay effect to those calculated.	
16	A4080	A4080 between A5 at tollgate and F2.	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
17	A5	A5 Between A55 J8a and A4080	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
18	A487	A487 Between B4547 and A55 J9.	Low	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
18.1	A4087	A4087 Between A55 J10 and A487	Low	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
19	B4547	B4547 between A4244 and A487.	Low	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
20	A4244	A4244/A5 between B4547 And A55 J11	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
21	A55	Britannia Bridge between A55 J9 and A55 J8a	Low	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
22	B5109	B5109 between LLR and access D2	High	Very Low	Very Low	Very Low	Very Low	Primary = Minor		**Minor - Not Significant**
23	Ffordd y Felin	Ffordd y Felin between A5025 and Brynddu Road	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**

Table 13.31: Driver Delay Assessment with Residual Effects

Link Ref	Link	Description	Link Sensitivity	Magnitude of Effect				Assessments used and calculated effects	Additional Commentary to reach Final Residual Effect	Final Residual Effect
				OHL + TBM		OHL + Drill and Blast				
				Primary	Secondary	Primary	Secondary			
24	B5110	B5110 between access C8 and UR 19	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
25	Brynddu Road	Brynddu Road Between Fordd y Felin and access B2	Low	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
26	B5112	B5112 between A55 J5 and B5111	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
27	UR 1	UR 1 between Brynddu Road and UR 4	Medium	Low	Very Low	Low	Very Low	Primary = Minor		**Minor - Not Significant**
28	UR 8	UR8 between B5111 and access B11	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
29	UR 9	UR9 between B5111 and access C2	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
30	Fodolydd Lane	Fodolydd Lane between B4547 and access F3	Low	High	High	High	High	Primary = Moderate Secondary = Moderate	Link Ref 30 serves as an alternative route for LGVs to the preferred route for tunnelling activity via the A4244 and access F14. The levels of traffic included in the assessment result in a moderate significant effect being calculated. The following factors should be considered in concluding the overall residual effect; minimal levels of baseline traffic (c200 veh /week), a preference to use alternative routes in the OCTMP (**Document 7.5**) and the consideration of tunnelling scenario 2. The effect would be reduced in tunnelling scenario 1 and scenario 3 and through any reallocation of construction traffic to more preferred routes. As a result the residual effect would be reduced.	**Minor - Not Significant**

Table 13.31: Driver Delay Assessment with Residual Effects

Link Ref	Link	Description	Link Sensitivity	Magnitude of Effect				Assessments used and calculated effects	Additional Commentary to reach Final Residual Effect	Final Residual Effect
				OHL + TBM		OHL + Drill and Blast				
				Primary	Secondary	Primary	Secondary			
31	UR 10	UR10 between B5111 and access C4	Medium	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
32	UR 16	UR 16 between B5420 and access E1	Low	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
33	UR 19	UR 19 between B5110 and access C6	Medium	Low	Very Low	Low	Very Low	Primary = Minor		**Minor - Not Significant**
34	Fodolydd Lane	Fodolydd Lane between B4547 and access F7 (enabling works only)	Low	Very Low	Very Low	Very Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
35	UR 3	UR 3 between Brynddu Road and access A9	Low	Low	Very Low	Low	Very Low	Primary = Negligible		**Negligible - Not Significant**
36	North of J7	North of J7 between A55 and access E5A	Low	Low	Very Low	Low	Very Low	Primary = Negligible		**Negligible - Not Significant**

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9.8.3 In summary there is one link (Link Ref 15) found to have a **Moderate, Significant** Final Residual Effect for Driver Delay. There are 40 links found to have Minor or **Negligible, Not Significant** Final Residual Effects. Driver Delay is also considered further in the Transport Assessment (**Document 5.13.2.1**) in the context of delay at junctions along construction traffic routes during peak periods

9.9 HIGHWAY SAFETY

Highway Safety Assessment

9.9.1 The assessment of Highway Safety effects differs from the other effects assessments in that only Primary assignment profiles have been used to ensure the maximum potential effect on each highway link is captured within the assessment.

9.9.2 Every construction traffic route has been subject to further assessment, which is documented in full in the TA (**Document 5.13.2.1**).

Mitigation to Reduce Highway Safety Effects

9.9.3 The OCTMP (**Document 7.5**) includes within it a range of measures designed to reduce the risk of accidents as a consequence of the Proposed Development. These include measures such as the implementation of temporary speed restrictions, prohibited traffic movements on certain links, advanced warning signs and surface treatments.

Residual Highway Safety Effects

9.9.4 On the basis of the assessment outlined in the TA (**Document 5.13.2.1**), it is not considered that any highway Safety effects worse than Negligible (**Not Significant**) are likely to occur. Whilst any accident is regrettable the forecast impact of the Proposed Development assuming peak week construction traffic is realised over a period of five years equates to negligible increases in the accident rate along the proposed construction routes.

9.10 PUBLIC RIGHTS OF WAY

PRoW - Primary and Secondary Assessment

9.10.1 Table 13.32 presents the full results of the Primary and Secondary Public Rights of Way assessments. The table reports the PRoW sensitivity and the magnitude of effect for both the primary and secondary assessments, and for both the TBM and the Drill and Blast scenarios. Following this a commentary is provided, which sets out the factors that have been taken into account in

reaching a conclusion as to the residual effect, which is reported in the final column.

Table 13.33: PRoW Assessment and Residual Effects

PRoW ID	Link Ref	PRoW Sensitivity	Highway Link	Description	OHL + TBM		OHL + Drill and Blast		Assessments used and calculated effects	Additional Commentary to reach Final Residual Effect	Final Residual Effect
					Primary	Secondary	Primary	Secondary			
NCR 566	1	Medium	A5025	A5025 between A5 at Valley Crossroads and Wylfa.	Medium	Low	Medium	Low	Primary = Moderate Secondary = Minor	The finding of minor significance is for the average traffic over the peak year. It is not anticipated that the peak year traffic levels would extend beyond a period longer than 12 months. The method of tunnel construction does not impact upon NCR 566.	**Minor - Not Significant**
NCR 566	4	Medium	B5111	B5111 between the B5110 and B5112	High	Low	High	Low	Primary = Major Secondary = Minor	The finding of minor significance is for the average traffic over the peak year. It is not anticipated that the peak year traffic levels would extend beyond a period longer than 12 months. The method of tunnel construction does not impact upon NCR 566.	**Minor - Not Significant**
NCR 5	5	Medium	B5110	B5110 between Llangefni and access C8.	Medium	Low	Medium	Low	Primary = Moderate Secondary = Minor	The finding of minor significance is for the average traffic over the peak year. It is not anticipated that the peak year traffic levels would extend beyond a period longer than 12 months. The method of tunnel construction does not impact upon NCR 5.	**Minor - Not Significant**
NCR 566	7	Medium	B5420	Between Llangefni Link Road and Access D4	Medium	Low	Medium	Low	Primary = Moderate Secondary = Minor	The finding of minor significance is for the average traffic over the peak year. It is not anticipated that the peak year traffic levels would extend beyond a period longer than 12 months. The method of tunnel construction does not impact upon NCR 566.	**Minor - Not Significant**
NCR 566	7.1	Medium	B5420a	Between Access D4 and Crosses Roundabout.	Medium	Low	Medium	Low	Primary = Moderate Secondary = Minor	Link Ref 7.1 is a contingency route for OHL traffic, in the event that link 7 were unavailable. The forecast levels of traffic are therefore unlikely to be experienced. The finding of minor significance is for the average traffic over the peak year. It is not anticipated that the peak year traffic levels would extend beyond a period longer than 12 months. The method of tunnel construction does not impact upon NCR 566.	**Negligible - Not Significant**
NCR 8	11.1	Medium	Unnamed Road 21	UR between Star Crossroads and	High	Low	High	Low	Primary = Major Secondary = Minor	The finding of Minor significance is for the average traffic over the peak year. It is not anticipated that the peak year traffic levels would extend beyond a period longer than 12 months. The method of tunnel construction does not impact upon NCR 8.	**Minor - Not Significant**

Table 13.33: PRoW Assessment and Residual Effects

PRoW ID	Link Ref	PRoW Sensitivity	Highway Link	Description	OHL + TBM		OHL + Drill and Blast		Assessments used and calculated effects	Additional Commentary to reach Final Residual Effect	Final Residual Effect
					Primary	Secondary	Primary	Secondary			
				Unnamed Road Star							
NCR 8	14	Medium	NCR8	Between A5 and access E7	High	Medium	High	Medium	Primary = Major Secondary = Moderate	Link Ref 14 is identified as a contingency route for Tunnel construction activity in the event that Link 15 were unavailable. The forecast levels of traffic assessed would be unlikely to be experienced. The finding of moderate significance is for the average traffic over the peak year including tunnelling activity. Due to its designation as a contingency route for tunnel traffic, it is considered that the effects on NCR 8 would be less than those calculated as the traffic associated with OHL construction only on this link is based around sporadic periods of activity at noticeably reduced levels.	**Minor - Not Significant**
Wales Coast Path	16	High	A4080	A4080 between A5 at tollgate and F2.	Low	Low	Low	Low	Primary = Moderate Secondary = Moderate	The Wales Coast Path is associated with construction traffic on Link 16. Link 16 is identified as a contingency route for Tunnel construction activity in the event that Link 15 is unavailable. The forecast levels of traffic assessed would be unlikely to be experienced. The finding of moderate significance is for the secondary assessment. Due to the designation of Link 16 as a contingency route for tunnel traffic, it is considered that the effects on the PRoW would be less than those calculated as the traffic associated with site setup and enabling works is based around noticeably reduced levels in comparison to the volumes assessed which assumes that all activity would route along this Link 16. The diversion of the Wales Coast Path as proposed in the PRoW Management Plan (**Document 7.6**) does not result in an increase in journey time in excess of 5 minutes.	**Minor - Not Significant**
Pentir Rhif 111	19	Medium	B4547	B4547 between A4244 and A487.	Medium	Low	Medium	Low	Primary = Moderate Secondary = Minor		**Minor - Not Significant**

9.10.2 In summary there are no PRoWs found to have Major Significant or Moderate Significant PRoW effects. There are nine PRoWs found to have Minor or Negligible Not Significant effects.

9.11 CONSIDERATION OF BUILT ENVIRONMENT INDICATORS USED BY HIGHLY SENSITIVE GROUPS

9.11.1 The assessment of links as receptors as outlined in Section 4 methodology is based upon an overall judgement of the sensitivity of the link. With the exception of Link 22, which is categorised as being of High sensitivity, all other links have been identified as being of medium or low sensitivity.

9.11.2 The scale of the study area may sometimes dilute the significance of effects, for example an effect that is significant when considered locally may not be considered significant against a baseline of the whole of the UK. For this reason this additional step in the assessment process has been undertaken to ensure that the scale of individual links has not masked an effect that may otherwise be considered significant on very local receptors.

9.11.3 Further consideration has therefore been given to individual built environment indicators used by sensitive groups (children, elderly and disabled people) where they are present on links categorised as having medium or low overall sensitivity.

9.11.4 The residual traffic and transport effects on each built environment indicator likely to be used by sensitive groups are outlined in Tables 13.34 to 13.38.

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9.12 SEVERANCE AT BEI USED BY SENSITIVE GROUPS

Table 13.34: Severance Assessment and Residual Effects for BEI Used by Sensitive Groups

Location	Built Env Indicator	Code	Link Ref	Link	OHL + TBM		OHL + Drill and Blast		Assessments used and calculated effects	Additional Commentary to reach Final Residual Effect	Final Residual Effect
					Primary	Secondary	Primary	Secondary			
Ysgol Gynradd Llanfachraeth	School	CT2/12567	1	A5025	Medium	Low	Medium	Low	Primary = Major Secondary = Moderate	Given that the school is located on the A5025, a link proposed for significant upgrades during the construction of the Wylfa Newydd Power Station, it is unlikely that the level of traffic assessed would be realised due to the transfer to the new link. The construction traffic for the Proposed Development would follow the new proposed alignment, which is further away from the school and without direct frontage. However, it is possible that construction traffic related to the Proposed Development would use the A5025 prior to the improvements being implemented. In order to reduce the effect of severance, either before or after the highway improvements have been implemented, and as outlined in the OCTMP (**Document 7.5**), routeing of HGVs along sections of highway links where schools are present would be avoided, if necessary, during typical pick up and drop off periods. Given the above factors it is considered that the final residual effect would be lower than the calculated effect.	**Minor Not Significant**
Rhosmeirch Playing Fields	Playground	C3/00032	4	B5111	High	Low	High	Low	Primary = Major Secondary = Moderate	This playing field not directly accessed from the Link 4, with access via UR12 for both vehicles and pedestrians. The Playing fields are screened by trees and protected by fencing from Link 4. The enclosed children's playground on the site is located to the north, with a football pitch providing a buffer of 75 metres between the playground and Link 4, Therefore the final residual effect would be lower than the calculated effect .	**Minor Not Significant**
Ysgol Gymuned Llanerchymedd	School	C2/00031	4.1	B5111	High	Low	High	Low	Primary = Major Secondary = Moderate	Severance effects would only occur during school hours and during the school term. Whilst it is acknowledged that the school is not directly accessed via Link 4.1, it is likely that the footways on this link would be used during pick up and drop off periods. In order to reduce the effect of severance and as outlined in the OCTMP	**Minor Not Significant**

Table 13.34: Severance Assessment and Residual Effects for BEI Used by Sensitive Groups

Location	Built Env Indicator	Code	Link Ref	Link	OHL + TBM		OHL + Drill and Blast		Assessments used and calculated effects	Additional Commentary to reach Final Residual Effect	Final Residual Effect
					Primary	Secondary	Primary	Secondary			
										(**Document 7.5**), routeing of HGVs along sections of highway links where schools/colleges are present would be avoided, if necessary, during typical pick up and drop off periods. In doing so, the final residual effect would be lower than the calculated effect.	
Coleg Menai Llangefni	School	C4/00227	6	B5420	Medium	Low	Medium	Low	Primary = Major Secondary =Moderate	Severance effects would only occur during college hours and during the college term. College students are generally less vulnerable than younger children, however in order to reduce the effect of severance and as outlined in the OCTMP (Document 7.5), routeing of HGVs along sections of highway links where schools/colleges are present would be avoided, if necessary, during AM and PM peak periods.. In doing so, the final residual effect would be reduced.	**Minor Not Significant**
Sant Tysilio Nursing Home	Retirement Home	C5/00785	9	A5025	Low	Very Low	Low	Very Low	Primary =Moderate Secondary = Minor t		**Minor Not Significant**
Ysgol Gynradd Cemaes	School	C1/00026	23	Ffordd y Felin	Very Low	Very Low	Very Low	Very Low	Primary =Minor		**Minor Not Significant**

9.13 PEDESTRIAN DELAY AT BEI USED BY SENSITIVE GROUPS

Table 13.35: Pedestrian Delay Assessment and Residual Effects for BEI Indicators Used by Sensitive Groups

Location	Built Env Indicator	Code	Link Ref	Link	OHL+ TBM		OHL + Drill and Blast		Assessments used and calculated effects	Additional Commentary to reach Final Residual Effect	Final Residual Effect
					Primary	Secondary	Primary	Secondary			
Ysgol Gynradd Llanfachraeth	School	CT2/12567	1	A5025	Very Low	Very Low	Very Low	Very Low	Primary = Minor		**Minor Not Significant**
Rhosmeirch Playing Fields	Playground	C3/00032	4	B5111	Very Low	Very Low	Very Low	Very Low	Primary = Moderate Secondary = Minor		**Minor Not Significant**
Ysgol Gymuned Llanerchymedd	School	C2/00031	4.1	B5111	Very Low	Very Low	Very Low	Very Low	Primary = Minor		**Minor Not Significant**
Coleg Menai Llangefni	School	C4/00227	6	B5420	Low	Low	Low	Low	Primary = Moderate Secondary = Moderate	Pedestrian delay effects would only be present on a college during college hours and during the college term. In order to reduce the effect of severance and as outlined in the OCTMP (Document 7.5), routeing of HGVs along sections of highway links where schools/colleges are present would be avoided, if necessary, during AM and PM peak periods. As such the residual effect would be reduced.	**Minor Not Significant**
Sant Tysilio Nursing Home	Retirement Home	C5/00785	9	A5025	Low	Low	Low	Low	Primary = Moderate Secondary = Moderate	A retirement home is not considered to be more sensitive to pedestrian delay effects than other built environment indicators that contribute towards the sensitivity assumed in Section 7.4 for the link as a whole. The final residual effect is consistent with that reported for Link 9.	**Negligible Not Significant**
Ysgol Gynradd Cemaes	School	C1/00026	23	Ffordd y Felin	Very Low	Very Low	Very Low	Very Low	Primary = Minor		**Minor Not Significant**

9.14 PEDESTRIAN AMENITY AT BEI USED BY SENSITIVE GROUPS

Table 13.36: Pedestrian Amenity Assessment and Residual Effects for BEI Indicators Used by Sensitive Groups

Location	Built Env Indicator	Code	Link Ref	Link	OHL + TBM		OHL + Drill and Blast		Assessments used and calculated effects	Additional Commentary to reach Final Residual Effect	Final Residual Effect
					Primary	Secondary	Primary	Secondary			
Ysgol Gynradd Llanfachraeth	School	CT2/12567	1	A5025	Very Low	Very Low	Very Low	Very Low	Primary = Minor		**Minor Not Significant**
Rhosmeirch Playing Fields	Playground	C3/00032	4	B5111	Very Low	Very Low	Very Low	Very Low	Primary = Minor		**Minor Not Significant**
Ysgol Gymuned Llanerchymedd	School	C2/00031	4.1	B5111	Very Low	Very Low	Very Low	Very Low	Primary = Minor		**Minor Not Significant**
Coleg Menai Llangefni	School	C4/00227	6	B5420	Very Low	Very Low	Very Low	Very Low	Primary = Minor		**Minor Not Significant**
Sant Tysilio Nursing Home	Retirement Home	C5/00785	9	A5025	Very Low	Very Low	Very Low	Very Low	Primary = Minor	A retirement home is not considered to be more sensitive to pedestrian amenity effects than other built environment indicators that contribute towards the sensitivity assumed in Section 7.4 for the link as a whole. The final residual effect is consistent with that reported for Link 9.	**Negligible Not Significant**
Ysgol Gynradd Cemaes	School	C1/00026	23	Ffordd y Felin	Very Low	Very Low	Very Low	Very Low	Primary = Minor		**Minor Not Significant**

9.15 FEAR AND INTIMIDATION AT BEI USED BY SENSITIVE GROUPS

Table 13.37: Fear and Intimidation Assessment and Residual Effects for BEI Indicators Used by Sensitive Groups

Location	Built Env Indicator	Code	Link Ref	Link	OHL + TBM		OHL + Drill and Blast		Assessments used and calculated effects	Additional Commentary to reach Final Residual Effect	Final Residual Effect
					Primary	Secondary	Primary	Secondary			
Ysgol Gynradd Llanfachraeth	School	CT2/12567	1	A5025	Medium	Low	Medium	Low	Primary = Major Secondary = Moderate	Given that the school is located on the A5025, a link proposed for significant upgrades during the construction of the Wylfa Newydd Power Station, it is unlikely that the level of traffic assessed would be realised due to the transfer of traffic to the new link. The construction traffic for the Proposed Development would be likely to follow the new proposed alignment, which is further away from the school and without direct frontage. However, it is possible that construction traffic related to the Proposed Development would use the A5025 prior to the improvements being implemented. In order to reduce the effect of fear and intimidation, either before or after the highway improvements have been implemented, and as outlined in the OCTMP (**Document 7.5**), routeing of HGVs along sections of highway links where schools are present would be avoided, if necessary, during typical pick up and drop off periods. Given the above factors it is considered that the final residual effect would be lower than the calculated effect.	**Minor Not Significant**
Rhosmeirch Playing Fields	Playground	C3/00032	4	B5111	High	Low	High	Low	Primary = Major Secondary = Moderate	This playing field not directly accessed from the Link 4, with access via UR12 for both vehicles and pedestrians. The Playing fields are screened by trees and protected by fencing from Link 4. The enclosed children's playground on the site is located to the north, with a football pitch providing a buffer of 75 metres between the playground and Link 4. As such the final residual effect is considered to be lower than the calculated effect.	**Minor Not Significant**

Table 13.37: Fear and Intimidation Assessment and Residual Effects for BEI Indicators Used by Sensitive Groups

Location	Built Env Indicator	Code	Link Ref	Link	OHL + TBM		OHL + Drill and Blast		Assessments used and calculated effects	Additional Commentary to reach Final Residual Effect	Final Residual Effect
					Primary	Secondary	Primary	Secondary			
Ysgol Gymuned Llanerchymedd	School	C2/00031	4.1	B5111	High	Low	High	Low	Primary = Major Secondary = Moderate	Fear and Intimidation effects would only be present on a school during school hours and during the school term. In order to reduce the effect of fear and intimidation and as outlined in the OCTMP (**Document 7.5**), there is potential to avoid routeing HGVs along sections of highway links where schools /colleges are present during typical pick up and drop off periods. Whilst it is acknowledged that the school is not directly accessed via Link 4.1, it is likely that the footways on this link would be used during pick up and drop off periods. As a result, it is recommended that the mitigation measure of prohibiting HGV movements during pick up and drop off periods is adopted for this link. In doing so, the final residual effect is reduced.	**Minor Not Significant**
Coleg Menai Llangefni	School	C4/00227	6	B5420	Medium	Low	Medium	Low	Primary = Major Secondary =Moderate	Fear and Intimidation effects would only occur during school hours and during the school term. Whilst it is acknowledged that the school is not directly accessed via Link 4.1, it is likely that the footways on this link would be used during pick up and drop off periods. In order to reduce the effect of severance and as outlined in the OCTMP (Document 7.5), routeing of HGVs along sections of highway links where schools/colleges are present would be avoided, if necessary, during typical pick up and drop off periods. In doing so, the final residual effect would be lower than the calculated effect.	**Minor Not Significant**
Sant Tysilio Nursing Home	Retirement Home	C5/00785	9	A5025	Low	Very Low	Low	Very Low	Primary =Moderate Secondary = Minor t		**Minor Not Significant**
Ysgol Gynradd Cemaes	School	C1/00026	23	Ffordd y Felin	Very Low	Very Low	Very Low	Very Low	Primary =Minor		**Minor Not Significant**

9.16 DRIVER DELAY AT BEI USED BY SENSITIVE GROUPS

Table 13.38: Driver Delay Assessment and Residual Effects for BEI Indicators Used by Sensitive Groups

Location	Built Env Indicator	Code	Link Ref	Link	OHL + TBM		OHL + Drill and Blast		Assessments used and calculated effects	Additional Commentary to reach Final Residual Effect	Final Residual Effect
					Primary	Secondary	Primary	Secondary			
Ysgol Gynradd Llanfachraeth	School	CT2/12567	1	A5025	Very Low	Very Low	Very Low	Very Low	Primary = Minor	The Built Environment Indicators in this table are not considered to be more sensitive to driver delay effects than other built environment indicators that contribute towards the sensitivity assumed in Section 7.4 for the links as a whole. The final residual effect is consistent with that reported for driver delay on all relevant links in this table.	**Negligible Not Significant**
Rhosmeirch Playing Fields	Playground	C3/00032	4	B5111	Very Low	Very Low	Very Low	Very Low	Primary = Minor		**Negligible Not Significant**
Ysgol Gymuned Llanerchymedd	School	C2/00031	4.1	B5111	Very Low	Very Low	Very Low	Very Low	Primary = Minor		**Negligible Not Significant**
Coleg Menai Llangefni	School	C4/00227	6	B5420	Very Low	Very Low	Very Low	Very Low	Primary = Minor		**Negligible Not Significant**
Sant Tysilio Nursing Home	Retirement Home	C5/00785	9	A5025	Very Low	Very Low	Very Low	Very Low	Primary = Minor		**Negligible Not Significant**
Ysgol Gynradd Cemaes	School	C1/00026	23	Ffordd y Felin	Very Low	Very Low	Very Low	Very Low	Primary = Minor		**Negligible Not Significant**

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9.17 RESIDUAL EFFECTS SUMMARY

9.17.1 Residual effects across the study area relevant to traffic and transport can be seen in Figure 13.10 to Figure 13.14 (**Documents 5.13.1.10 to 5.13.1.14**), and are summarised in Section 11.

9.17.2 Applying the Mitigation by Design and Control and Management Measures outlined earlier in this section would reduce the residual effects associated with the construction of the Proposed Development.

9.17.3 Link 15 (Pont Ronwy Link) is assessed as having a **Major, Significant** Severance effect. All other links are assessed as having **Minor, Not Significant** or **Negligible, Not Significant** Severance effects.

9.17.4 Link 15 is assessed as having a **Moderate, Significant** Pedestrian Delay effect. All other links are assessed as having **Minor, Not Significant** or **Negligible, Not Significant** Pedestrian Delay effects.

9.17.5 Link 15 is assessed as having a **Moderate, Significant** Pedestrian Amenity effect. All other links are assessed as having **Minor, Not Significant** or **Negligible, Not Significant** Pedestrian Amenity effects.

9.17.6 All links are assessed as having **Minor, Not Significant** or **Negligible, Not Significant** Fear and Intimidation effects.

9.17.7 Link 15 is assessed as having a **Moderate, Significant** Driver Delay effect. All other links are assessed as having **Minor, Not Significant** or **Negligible, Not Significant** Driver Delay effects.

9.17.8 All links are assessed as having **Negligible, Not Significant** Highway Safety effects.

9.17.9 **Minor, Not Significant** or **Negligible, Not Significant** effects on Public Rights of Way are identified in 9 locations.

9.17.10 A supplementary assessment considered effects of Severance, Pedestrian Delay, Pedestrian Amenity, Fear and Intimidation and Driver Delay on Built Environment Indicators used by sensitive affected parties. The assessment found **Minor, Not Significant** and **Negligible, Not Significant** final residual effects. No Significant effects were found in this supplementary assessment, which was intended to reflect sensitive locations along highway links with an assumed sensitivity of Medium or Low.

10 Cumulative Effects

10.1 INTRODUCTION

10.1.1 This section of the assessment considers the cumulative effects of the various elements of the Proposed Development and the accumulated effects of the proposals with other developments proposed in the vicinity.

10.2 INTRA PROJECT CUMULATIVE EFFECTS

10.2.1 Intra-project effects are reported in Chapter 19, Intra-Project Effects (**Document 5.19**).

10.3 INTER PROJECT CUMULATIVE EFFECTS

10.3.1 Inter-project cumulative effects occur when two or more planned developments have an effect on the same receptor leading to an overall effect of greater significance. Note that these 'other developments' are developments that have not yet been constructed and are not operational; where developments are constructed and operational they are considered to form part of the existing baseline.

10.3.2 Chapter 20 Inter-Project Cumulative Effects (**Document 5.20**) presents a methodology for determining whether inter-project cumulative effects could occur as a result of these 'other developments' being built and/or operated at the same time as the Proposed Development. This methodology is based upon the Planning Inspectorate Advice Note 17, which deals with cumulative effects assessment. A long list of other developments needs to be developed and agreed initially. Once this is agreed, the methodology consists of four main stages as follows:

- Stage 1: a long list of other developments is identified and outline information gathered. Consideration is given to whether the other development is within the zone of influence (ZOI) for each topic; if it is, then the assessment progresses to stage 2.

- Stage 2: consideration is given to the potential temporal overlap i.e. whether the construction or operational effects of the other development could coincide with those of the Proposed Development. Consideration is also given to the scale and nature of the other development, the nature

of the receiving environment and whether there are shared receptors, and whether there is a 'pathway' for a cumulative effect to occur. At the end of stage 2 a shortlist of other developments is considered in stages 3 and 4.

- Stage 3: detailed information is gathered about each of the shortlisted other developments, typically in the form of ESs or Scoping Reports.
- Stage 4: cumulative effects are assessed and mitigation identified, and apportioned, where necessary. The securing mechanism for any necessary mitigation is identified.

10.3.3 The potential for cumulative effects to occur is considered for any effects that are minor, moderate or major. However, where the residual effects on a shared receptor are concluded to be negligible for either the Proposed Development or the other development, it is not considered possible for there to be a resulting inter-project cumulative effect. Where all effects related to a particular topic are negligible, for either the proposed Development or other development, the other development is screened out at stage 2.

10.3.4 Details about the 'other developments' on the long list considered at stage 1 are provided in Chapter 20 Inter-Project Cumulative Effects (**Document 5.20**) and its appendices.

Stage 1 and Stage 2

10.3.5 Table 13.39 provides a summary of stages 1 and 2 of the inter-project cumulative effects assessment on highway links subject to traffic effects. Where the effects of other developments are either outside the ZOI or outside the temporal scope of the Proposed Development, they have not been included in this table.

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Table 13.39 Summarising Stage 1 and Stage 2 of the Inter-Project CEA

Development Name	Stage 1		Stage 2		
	Within ZOI?	Progress to Stage 2?	Overlap in Temporal Scope?	Is the Scale and Nature of Development likely to have a Significant Cumulative Effect? Relevant Shared Receptors and/or Pathways?	Progress to Stage 3/4?
Wylfa Newydd Nuclear Power Station	Yes	Yes	Potential overlap between both the construction phases.	Shared receptors: link 1, link 2, link 21. Potential for cumulative effects on shared receptors to occur as a result of the respective construction programmes and associated vehicle movements. As **negligible** effects have been reported by the Proposed Development for link 2, link 21 and for pedestrian delay, pedestrian amenity and driver delay on link 1 significant cumulative effects are considered unlikely therefore these receptors/ effects are not considered further in this assessment.	Yes – Link 1
Wylfa Nuclear Power Station Decommissioning	Yes	Yes	Overlap between all phases of the Wylfa Nuclear Power Station Decommissioning and the construction and operation of the Proposed Development.	Shared receptors: link 1, link 2 and link 21. As decommissioning works had commenced when the traffic surveys were conducted, the decommissioning traffic is already included in the baseline (and therefore also the future baseline) traffic figures. As such, the effects of the two developments cannot be separately identified. As the assessment is based on a percentage increase over the baseline it is not therefore possible to identify the cumulative effects with this development.	No
Penrhos Leisure Village	No	No			
Anglesey Eco Park	No	No			
Parc Cybi	No	No			
Rhyd-y-Groes Re-power	No	No			
Holyhead Waterfront Redevelopment	No	No			
Glyn Rhonwy Pumped Storage	Yes	Yes	Construction is expected to last four years with the development operational by 2019. However as construction does not appear to have started yet, it is assumed that there could be an	Shared receptors: link 18. Effects as a result of the Proposed Development are **negligible** for severance, pedestrian delay, pedestrian amenity, fear and intimidation and driver delay, therefore potential significant cumulative effects are considered unlikely.	No

Table 13.39 Summarising Stage 1 and Stage 2 of the Inter-Project CEA

Development Name	Stage 1		Stage 2		
	Within ZOI?	Progress to Stage 2?	Overlap in Temporal Scope?	Is the Scale and Nature of Development likely to have a Significant Cumulative Effect? Relevant Shared Receptors and/or Pathways?	Progress to Stage 3/4?
			overlap between construction and operational phases.		
Underground Grid Connection between Glyn Rhonwy Pumped Storage Development and Pentir Substation	Yes	Yes	The connection is expected to take less than a year however as the start date is not currently known, it is assumed there could be overlap in the construction and operational phases.	Shared receptors: link 18. Effects as a result of the Proposed Development are **negligible** for severance, pedestrian delay, pedestrian amenity, fear and intimidation and driver delay, therefore potential significant cumulative effects are considered unlikely.	No
West Anglesey Demonstration Project	No	No			
Holyhead Deep	No	No			
A487 Caernarfon to Bontnewydd Bypass	Yes	Yes	Overlap between construction phases in 2020 to 2021 and the operational phases.	Shared receptors: link 18. Effects as a result of the Proposed Development are **negligible** for severance, pedestrian delay, pedestrian amenity, fear and intimidation and driver delay, therefore potential significant cumulative effects are considered unlikely.	No
Menai Science Park	Yes	Yes	The first phase of the development would be completed prior to the construction phase of the Proposed Development however the remainder of the development would take approximately 10 years to complete (more detailed timescale currently unknown) therefore is likely to overlap with	Shared receptor: link 12. Construction effects as a result of the Proposed Development are **negligible**, therefore potential significant cumulative effects are considered unlikely.	No

Table 13.39 Summarising Stage 1 and Stage 2 of the Inter-Project CEA

Development Name	Stage 1		Stage 2		
	Within ZOI?	Progress to Stage 2?	Overlap in Temporal Scope?	Is the Scale and Nature of Development likely to have a Significant Cumulative Effect? Relevant Shared Receptors and/or Pathways?	Progress to Stage 3/4?
			both the construction and operation phases of the proposed development.		
Third Menai Crossing	Yes	Yes	Potential for the construction phases to overlap (construction timescale currently unknown anticipated to be 2020/2021 to 2022/2023). The operations phases would also overlap.	Potential shared receptors: link 21 Effects as a result of the Proposed Development are **negligible** for severance, pedestrian delay, pedestrian amenity, fear and intimidation and driver delay, therefore potential significant cumulative effects are considered unlikely.	No
A55 - Junction 15 & Junction 16 Improvement	Yes	Yes	Potential for the construction phases to overlap (timescales currently unknown but expected to be between autumn 2020 to autumn 2022). The operational phases would also overlap.	Shared receptors: none.	No
A55 Abergwyngregyn to Tai'r Meibion Improvement	Yes	Yes	Potential for the construction phases to overlap (timescales currently unknown but expected to be between autumn 2020 to autumn 2022). The operational phases would also overlap.	Shared receptors: none.	No
Nant y Garth Landfill Site	Yes	Yes	Overlap of operation of landfill (time-limited to the end of July 2021) and construction of the	Shared receptor: link 19. Nant y Garth Landfill Site proposals comprise minor amendments to restoration conditions. The operational traffic of the site is included within the baseline and future baseline therefore	No

Table 13.39 Summarising Stage 1 and Stage 2 of the Inter-Project CEA

Development Name	Stage 1		Stage 2		
	Within ZOI?	Progress to Stage 2?	Overlap in Temporal Scope?	Is the Scale and Nature of Development likely to have a Significant Cumulative Effect? Relevant Shared Receptors and/or Pathways?	Progress to Stage 3/4?
			Proposed Development.	the Proposed Developments assessment is inherently cumulative including this other development.	
Caernarfon Brickworks Quarry	No	No			
Amlwch Liquid Natural Gas (LNG)	No	No			
Green Wire	Yes	Yes	Timescales currently unknown. If connection in place as per the agreement (completed by end of 2020) there would be an overlap with the OHL and tunnel construction however not with works at Pentir. Likely to be an overlap in operation phases.	Shared receptor: link 19 and 20. Potential for cumulative effects on Link 19 for Severance, Fear and Intimidation and Link 20 for Severance, Pedestrian Delay, Fear and Intimidation, where the Proposed Development is predicted to see **minor** effects.	Yes
Llanbadrig Solar Farm	Yes	Yes	It is likely that this development would be constructed before the construction phase of the Proposed Development. There would be an overlap with the operational phases.	Shared receptor: link 1. Llanbadrig Solar Farm would be complete prior to the construction of the Proposed Development. The operational traffic is therefore included within the future baseline therefore the Proposed Developments assessment is inherently cumulative including this other development.	No
Codling Wind Park	No	No			
Grŵp Llandrillo Menai Llangefni Campus	Yes	Yes	Although some elements would be completed prior to the construction phase of the Proposed Development there is	Shared receptor: link 6, link 8 and link 8.2. Effects as a result of the Proposed Development on link 8 are **negligible**, therefore potential significant cumulative effects are considered unlikely.	Yes – link 6 and 8.2

Table 13.39 Summarising Stage 1 and Stage 2 of the Inter-Project CEA

Development Name	Stage 1		Stage 2		
	Within ZOI?	Progress to Stage 2?	Overlap in Temporal Scope?	Is the Scale and Nature of Development likely to have a Significant Cumulative Effect? Relevant Shared Receptors and/or Pathways?	Progress to Stage 3/4?
			the potential for overlap between the full build out of the site (timescale currently unknown) and the construction of the Proposed Development. There is also overlap between the operational phases of the developments.	The Proposed Development reports **minor** effects on link 6 for Severance, Pedestrian Delay and Fear and Intimidation, so there is the potential for cumulative effects during the respective construction phases. The Proposed Development reports **minor** effects on link 8.2 for Severance, and Fear and Intimidation, so there is the potential for cumulative effects during the respective construction phases.	
Dinorwig Cables	Yes	Yes	Potential overlap between construction phases (cable installation is programmed for between 2019 and 2025) along with overlap in the operational phases.	Potential shared receptor: link 20, link 19 Construction could overlap with the construction of the Proposed Development. Effects as a result of the Proposed Development are **negligible** on pedestrian amenity and driver delay, therefore potential significant cumulative effects are considered unlikely. There is some potential for significant cumulative effects in relation to other effect types.	Yes – Link 20
Holyhead Port Expansion	Yes	Yes	Planning consent is not currently in place. Therefore timescales are unknown. Potential overlap between construction phases. Overlap between the operational phases.	Potential shared receptor: link 21. Effects as a result of the Proposed Development are **negligible**, therefore potential significant cumulative effects are considered unlikely.	No

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Stage 3 and Stage 4

10.3.6 At the end of Stage 2 the original long list of other developments was reduced to a short list of other development where there would be potential for a significant cumulative effect to occur. The short list of other developments is as follows:

- Wylfa Newydd Nuclear Power Station;
- Green Wire;
- Grŵp Llandrillo Menai Llangefni Campus; and
- Dinorwig Cables.

10.3.7 Stage 3 requires the gathering of detailed information; however, a substantial amount of information about the other developments had already been gathered to support stages 1 and 2.

10.3.8 The results of the Stage 4 assessment of cumulative effects and mitigation are presented in Table 13.40 below.

10.3.9 Professional judgement has been applied in determining whether the combination of effects from two developments could result in a significant effect overall. In the case of minor effects, it is considered highly unlikely that effects could prove to be additive; however, professional judgement has been applied to check that two or more minor effects do not have potential to accumulate, thereby resulting in a potentially significant effect.

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Table 13.40 Traffic and Transport CEA					
Development Name	Effects on shared receptors from the Proposed Development	Effects on shared receptors from the 'other development'	Assessment of Cumulative effect with Proposed Development	Proposed Mitigation applicable to the Proposed Development including any apportionment	Residual Cumulative Effect
Wylfa Newydd Power Station	Link 1 – **Minor** Adverse effects (not significant) for Severance and Fear and Intimidation.	Link 1 – Traffic flow and composition effects are **Moderate** Adverse on sections of Link 1 that would not benefit from transfer of traffic as a result of the proposed A5025 offline improvements, Traffic flow and composition effects range from **Moderate to Major** Beneficial on sections of Link 1 on the existing route alignment of the A5025 that would benefit from transfer of traffic as a result of the proposed A5025 offline improvements.	Link 1 has been assumed a Medium sensitivity. This assumed sensitivity does not take into consideration the proposed A5025 improvement schemes being put forward by the developer Horizon Nuclear Power to enable Wylfa Newydd Power Station. If these works were to be completed prior to the construction of the Proposed Development then the assumed sensitivity for Link 1 could be reduced to Low, due to the alignment of Link 1 routeing further from built environment indicators which are adjacent to the existing alignment. Based on Medium sensitivity, Link 1 is anticipated to have **minor** effects for Severance and Fear and Intimidation as a result of the Proposed Development. Were this **minor** effect to coincide with the **moderate** adverse effect on traffic flow and composition as a result of the combined elements of the Wylfa Newydd Power Station, there are likely to be cumulative effects.	No additional mitigation is required other than the proposed Online and Offline highway improvement works on the A5025 (Link 1) associated with the Wylfa Newydd Power Station.	With the mitigation in place the Proposed Development effects would reduce from **Minor** to **Negligible**, therefore cumulative effects would not be significant, **Not Significant**
Greenwire	Link 19 – **Minor** Adverse effects (not significant) for Severance and Fear and Intimidation Link 20 – **Minor** Adverse effects (not significant) for Severance, Pedestrian Delay and Fear and Intimidation.	No information available	It is considered that the effects associated with the Greenwire development are unlikely to exceed **negligible** for traffic effects therefore it is unlikely to contribute to a significant cumulative effect.	No additional mitigation is considered to be necessary	**Not significant**
Grŵp Llandrillo Menai Llangefni Campus	Link 6 – **Minor** Adverse effects (not significant) for Severance, Pedestrian	Whilst construction phases may overlap, no construction traffic	There would be a potential for cumulative construction traffic effects on shared links if construction occurred concurrently. Given that the Proposed Development has	No additional mitigation is	**Not significant**

Table 13.40 Traffic and Transport CEA					
Development Name	Effects on shared receptors from the Proposed Development	Effects on shared receptors from the 'other development'	Assessment of Cumulative effect with Proposed Development	Proposed Mitigation applicable to the Proposed Development including any apportionment	Residual Cumulative Effect
	Delay and Fear and Intimidation. Link 8.2 – **Minor** Adverse effects (not significant) for Severance and Fear and Intimidation.	information is known for the other development.	predicted minor effects on the shared links potential cumulative effects would not be expected to give rise to a significant cumulative effect. Operational flows arising from the development are included in the future baseline, therefore the assessment is inherently cumulative.	considered to be necessary	
Dinorwig Cables	Link 19 – **Minor** Adverse effects (not significant) for Severance and Fear and Intimidation. Link 20 -**Minor** Adverse effects (not significant) for Severance, Fear and Intimidation and Pedestrian Delay.	No information available.	Effects associated with the Dinorwig Cables development are unlikely to exceed **negligible** for traffic effects therefore it is unlikely to contribute to a significant cumulative effect.	No additional mitigation is considered to be necessary	**Not significant**

Conclusion

10.3.10 Taking into consideration all of the other developments for which a potential cumulative traffic effect has been identified, the overall effects are considered to be no worse than the most adverse reported for the Proposed Development or the other developments, and would not increase the significance.

11 Summary

11.1 INTRODUCTION

11.1.1 Table 13.41 summarises provides a summary of potential effects, mitigation measures and the residual effects for highway links, public rights of way and built environment indicators used by sensitive affected parties assessed previously in this chapter.

Table 13.41 Potential Traffic Effects of the Proposed Development

Resource/Receptor	Sensitivity Value	Potential effects.	Mitigation	Residual Magnitude	Residual Significance
1 A5025 between A5 at Valley Crossroads and Wylfa	Medium	Severance, Fear and Intimidation	No specific mitigation.	Low	Minor (**Not Significant**)
		Pedestrian Delay, Pedestrian Amenity, Driver Delay	No specific mitigation	Very Low	Negligible (**Not Significant**)
2 A5 between A55 J3 and Valley Crossroads	Low	Severance, Fear and Intimidation	No specific mitigation	Low	Negligible (**Not Significant**)
		Pedestrian Delay, Pedestrian Amenity, Driver Delay	No specific mitigation	Very Low	Negligible (**Not Significant**)
3 UR 4 between B5111 and B2	Medium	Severance, Fear and Intimidation	No specific mitigation	Low	Minor (**Not Significant**)
		Pedestrian Delay, Pedestrian Amenity, Driver Delay	No specific mitigation	Very Low	Negligible (**Not Significant**)
4 B5111 between B5110 and B5112	Medium	Severance, Fear and Intimidation	No specific mitigation	Low	Minor (**Not Significant**)
		Pedestrian Delay, Pedestrian Amenity, Driver Delay	No specific mitigation	Very Low	Negligible (**Not Significant**)
4.1 B5111 between B5110 and B5112	Medium	Severance, Fear and Intimidation	No specific mitigation	Low	Minor (**Not Significant**)
		Pedestrian Delay, Pedestrian Amenity, Driver Delay	No specific mitigation	Very Low	Negligible (**Not Significant**)
5 B5111 between the B5112 and access B8	Medium	Severance, Fear and Intimidation	No specific mitigation	Low	Minor (**Not Significant**)
		Pedestrian Delay, Pedestrian Amenity, Driver Delay	No specific mitigation	Very Low	Negligible (**Not Significant**)
6 B5420 between LLR and B5110	Medium	Severance, Fear and Intimidation, Pedestrian Delay	No specific mitigation	Low	Minor (**Not Significant**)
		Pedestrian Amenity, Driver Delay	No specific mitigation	Very Low	Negligible (**Not Significant**)
7 Between Llangefni Link Road and Access D4	Medium	Severance, Fear and Intimidation	No specific mitigation	Low	Minor (**Not Significant**)
		Pedestrian Delay, Pedestrian Amenity, Driver Delay	No specific mitigation	Very Low	Negligible (**Not Significant**)
7.1 Between Access D4 and Crosses Roundabout	Medium	Severance, Fear and Intimidation	Used as a contingency for OHL traffic in the event that preferred routes are unavailable. The assessed level of traffic on this route is unlikely to be realised, and if it were realised effects on other routes would be reduced.	Low	Negligible (**Not Significant**)
		Pedestrian Delay, Pedestrian Amenity, Driver Delay	Used as a contingency for OHL traffic in the event that preferred routes are unavailable. The assessed level of traffic on this route is unlikely to be	Very Low	Negligible (**Not Significant**)

Table 13.41 Potential Traffic Effects of the Proposed Development

Resource/Receptor	Sensitivity Value	Potential effects.	Mitigation	Residual Magnitude	Residual Significance
			realised, and if it were realised effects on other routes would be reduced.		
8 Between A55 J6 Llangefni Link Road.	Low	Severance, Fear and Intimidation, Pedestrian Delay	No specific mitigation	Low	Negligible (**Not Significant**)
		Pedestrian Amenity, Driver Delay	No specific mitigation	Very Low	Negligible (**Not Significant**)
8.1 Between A5114 via existing carriageway to Llangefni Link Road	Medium	Severance, Fear and Intimidation, Pedestrian Delay	Used as a contingency for OHL traffic in the event that preferred routes are unavailable. The assessed level of traffic on this route is unlikely to be realised, and if it were realised effects on other routes would be reduced.	Low	Negligible (**Not Significant**)
		Pedestrian Amenity, Driver Delay	Used as a contingency for OHL traffic in the event that preferred routes are unavailable. The assessed level of traffic on this route is unlikely to be realised, and if it were realised effects on other routes would be reduced	Very Low	Negligible (**Not Significant**)
8.2 LLR between Llangefni Industrial Estate and the B5420	Low	Severance, Fear and Intimidation	No specific mitigation	Medium	Minor (**Not Significant**)
		Pedestrian Delay	No specific mitigation	Low	Negligible (**Not Significant**)
		Pedestrian Amenity, Driver Delay	No specific mitigation	Very Low	Negligible (**Not Significant**)
9 A5025 between A55 J8 to B5420.	Low	Severance, Fear and Intimidation, Pedestrian Delay	Used as a contingency for OHL traffic in the event that preferred routes are unavailable. The assessed level of traffic on this route is unlikely to be realised, and if it were realised effects on other routes would be reduced	Low	Negligible (**Not Significant**)
		Pedestrian Amenity, Driver Delay	Used as a contingency for OHL traffic in the event that preferred routes are unavailable. The assessed level of traffic on this route is unlikely to be realised, and if it were realised effects on other routes would be reduced	Very Low	Negligible (**Not Significant**)
	Medium	Severance, Fear and Intimidation	No specific mitigation	Low	Minor (**Not Significant**)

Table 13.41 Potential Traffic Effects of the Proposed Development					
Resource/Receptor	Sensitivity Value	Potential effects.	Mitigation	Residual Magnitude	Residual Significance
11 Unnamed Road between Star and access E5		Pedestrian Delay, Pedestrian Amenity, Driver Delay	No specific mitigation	Very Low	Negligible (**Not Significant**)
11.1 UR between Star Crossroads and Unnamed Road Star	Low	Severance, Fear and Intimidation	No specific mitigation	Low	Negligible (**Not Significant**)
		Pedestrian Delay, Pedestrian Amenity, Driver Delay	No specific mitigation	Very Low	Negligible (**Not Significant**)
12 Between A55 J7 and A5.	Low	Severance, Fear and Intimidation, Pedestrian Delay	No specific mitigation	Low	Negligible (**Not Significant**)
		Pedestrian Amenity, Driver Delay	No specific mitigation	Very Low	Negligible (**Not Significant**)
13 A5 between A5152 and A55 J7a	Low	Severance, Fear and Intimidation, Pedestrian Delay	No specific mitigation	Low	Negligible (**Not Significant**)
		Pedestrian Amenity, Driver Delay	No specific mitigation	Very Low	Negligible (**Not Significant**)
14 Between A5 and access E7	Medium	Severance, Fear and Intimidation	This link is identified as a contingency route for Tunnel construction activity in the event Link 15 were unavailable. The forecast levels of traffic assessed would be unlikely to be experienced.	Medium	Minor (**Not Significant**)
		Pedestrian Delay, Pedestrian Amenity, Driver Delay	This link is identified as a contingency route for Tunnel construction activity in the event Link 15 were unavailable. The forecast levels of traffic assessed would be unlikely to be experienced.	Very Low	Negligible (**Not Significant**)
15 Pont Rhonwy Link (PRL)	Low	Severance	No specific mitigation	High	Major (**Significant**)
		Fear and Intimidation	The link is proposed for closure for the construction period of the Proposed Development, so there would be no general through-traffic which might otherwise have the potential to cause Fear and Intimidation	High	Minor (Not Significant)
		Driver Delay	No specific mitigation	Low	Moderate (**Significant**)
		Pedestrian Delay, Pedestrian Amenity	No specific mitigation	Very Low	Moderate (**Significant**)
	Medium	Severance, Fear and Intimidation, Pedestrian Delay	No specific mitigation	Low	Minor (**Not Significant**)

Table 13.41 Potential Traffic Effects of the Proposed Development

Resource/Receptor	Sensitivity Value	Potential effects.	Mitigation	Residual Magnitude	Residual Significance
16 A4080 between A5 at tollgate and F2		Pedestrian Amenity, Driver Delay	No specific mitigation	Very Low	Negligible (**Not Significant**)
17 A5 Between A55 J8a and A4080	Medium	Severance, Fear and Intimidation, Pedestrian Delay	Contingency Route for tunnelling elements only, in the event that Link 15 were unavailable, so unlikely to be fully used to the level assessed Results for Tunnelling Scenario 1 would reduce magnitude and significance.	Low	Minor (**Not Significant**)
		Pedestrian Amenity, Driver Delay	Contingency Route for tunnelling elements only, in the event that Link 15 were unavailable, so unlikely to be fully used to the level assessed Results for Tunnelling Scenario 1 would reduce magnitude and significance.	Very Low	Negligible (**Not Significant**)
18 A487 Between B4547 and A55 J9	Low	Severance, Fear and Intimidation, Pedestrian Delay	No specific mitigation	Low	Negligible (**Not Significant**)
		Pedestrian Amenity, Driver Delay	No specific mitigation	Very Low	Negligible (**Not Significant**)
18.1 A4087 Between A55 J10 and A487	Low	Severance, Fear and Intimidation, Pedestrian Delay	Identified as a contingency route substation works at Pentir, OHL works and tunnelling works. Unlikely to be used to the level assessed.	Low	Negligible (**Not Significant**)
		Pedestrian Amenity, Driver Delay	Identified as a contingency route substation works at Pentir, OHL works and tunnelling works. Unlikely to be used to the level assessed.	Very Low	Negligible (**Not Significant**)
19 B4547 between A4244 and A487	Low	Severance, Fear and Intimidation	No specific mitigation	Medium	Minor (**Not Significant**)
		Pedestrian Delay,	No specific mitigation	Low	Negligible (**Not Significant**)
		Pedestrian Amenity, Driver Delay	No specific mitigation	Very Low	Negligible (**Not Significant**)
20 A4244/A5 between B4547 And A55 J11	Medium	Severance, Fear and Intimidation Pedestrian Delay	No specific mitigation	Low	Minor (**Not Significant**)
		Pedestrian Amenity, Driver Delay	No specific mitigation	Very Low	Negligible (**Not Significant**)

Table 13.41 Potential Traffic Effects of the Proposed Development

Resource/Receptor	Sensitivity Value	Potential effects.	Mitigation	Residual Magnitude	Residual Significance
21 Britannia Bridge between A55 J9 and A55 J8a	Low	Severance, Fear and Intimidation Pedestrian Delay,	No specific mitigation	Low	Negligible (**Not Significant**)
		Pedestrian Amenity, Driver Delay	No specific mitigation	Very Low	Negligible (**Not Significant**)
22 B5109 between LLR and access D2	High	Severance, Pedestrian Delay, Pedestrian Amenity, Fear and Intimidation, Driver Delay	Light Goods Vehicles Only	Very Low	Minor (**Not Significant**)
23 Ffordd y Felin between A5025 and Brynddu Road	Medium	Severance, Pedestrian Delay, Pedestrian Amenity, Fear and Intimidation, Driver Delay	Light Goods Vehicles Only	Very Low	Negligible (**Not Significant**)
24 B5110 between access C8 and UR 19	Medium	Severance, Pedestrian Delay, Pedestrian Amenity, Fear and Intimidation, Driver Delay	Light Goods Vehicles Only	Very Low	Negligible (**Not Significant**)
25 Brynddu Road Between Ffordd y Felin and access B2	Low	Severance, Pedestrian Delay, Pedestrian Amenity, Fear and Intimidation, Driver Delay	Light Goods Vehicles Only	Very Low	Negligible (**Not Significant**)
26 B5112 between A55 J5 and B5111	Medium	Severance, Pedestrian Delay, Pedestrian Amenity, Fear and Intimidation, Driver Delay	Light Goods Vehicles Only	Very Low	Negligible (**Not Significant**)
27 UR 1 between Brynddu Road and UR 4	Medium	Severance, , Fear and Intimidation, Driver Delay	Light Goods Vehicles Only	Low	Minor (**Not Significant**)
		Pedestrian Amenity, Pedestrian Delay	Light Goods Vehicles Only	Very Low	Negligible (**Not Significant**)
28 UR8 between B5111 and access B11	Medium	Severance, Pedestrian Amenity, Fear and Intimidation, Driver Delay	Light Goods Vehicles Only	Very Low	Negligible (**Not Significant**)
29 UR9 between B5111 and access C2	Medium	Severance, Pedestrian Delay, Pedestrian Amenity, Fear and Intimidation, Driver Delay	Light Goods Vehicles Only	Very Low	Negligible (**Not Significant**)
30 Fodolydd Lane between B4547 and access F3	Low	Severance, Fear and Intimidation, Driver Delay, Pedestrian Amenity	Serves as alternative route for LGVs for tunnelling activities. Preferred route would be via A2444 (Link 20) and B4547 (Link 19) to access F14. The effect would only be realised in the event that Tunnel Scenario 2 and 3 were adopted.	High	Minor (**Not Significant**)
		Pedestrian Delay	Serves as alternative route for LGVs for tunnelling activities. Preferred route would be via A2444 (Link 20) and	Very Low	Negligible (**Not Significant**)

Table 13.41 Potential Traffic Effects of the Proposed Development

Resource/Receptor	Sensitivity Value	Potential effects.	Mitigation	Residual Magnitude	Residual Significance
			B4547 (Link 19) to access F14. The effect would only be realised in the event that Tunnel Scenario 2 and 3 were adopted.		
31 UR10 between B5111 and access C4	Medium	Severance, Pedestrian Delay, Pedestrian Amenity, Fear and Intimidation, Driver Delay	Light Goods Vehicles Only	Very Low	Negligible (**Not Significant**)
32 UR 16 between B5420 and access E1	Low	Severance, Pedestrian Delay, Pedestrian Amenity, Fear and Intimidation, Driver Delay	Light Goods Vehicles Only	Very Low	Negligible (**Not Significant**)
33 UR 19 between B5110 and access C6	Medium	Severance, ,Fear and Intimidation, Driver Delay	Light Goods Vehicles Only	Low	Minor (**Not Significant**)
		Pedestrian Delay, Pedestrian Amenity	Light Goods Vehicles Only	Very Low	Negligible (**Not Significant**)
34 Fodolydd Lane between B4547 and access F7 (enabling works only)	Low	Severance, Fear and Intimidation Pedestrian Delay, Pedestrian Amenity, Driver Delay	Enabling works route only	Very Low	Negligible (**Not Significant**)
35 UR 3 between Brynddu Road and access A9	Low	Severance, Fear and Intimidation, Driver Delay	Light Goods Vehicles Only	Low	Negligible (**Not Significant**)
		Pedestrian Delay, Pedestrian Amenity	Light Goods Vehicles Only	Very Low	Negligible (**Not Significant**)
36 North of J7 between A55 and access E5A	Low	Severance, Fear and Intimidation	No specific mitigation	Medium	Minor (**Not Significant**)
		Driver Delay	No specific mitigation	Low	Negligible (**Not Significant**)
		Pedestrian Amenity, Pedestrian Delay	No specific mitigation	Very Low	Negligible (**Not Significant**)
Ysgol Gynradd Llanfachraeth	High	Severance, Fear and Intimidation, Pedestrian Delay, Pedestrian Amenity	Routeing of HGVs along sections of highway links where schools are present would be avoided, if necessary, during typical pick up and drop off periods. Once the road improvements proposed for Wylfa Newydd Power Station are in place effects would be reduced.	Low	Minor (**Not Significant**)
Rhosmeirch Playing Fields	High	Severance, Fear and Intimidation, Pedestrian Delay, Pedestrian Amenity	None required	Low	Minor (**Not Significant**)

Table 13.41 Potential Traffic Effects of the Proposed Development					
Resource/Receptor	Sensitivity Value	Potential effects.	Mitigation	Residual Magnitude	Residual Significance
Ysgol Gymuned Llanerchymedd	High	Severance, Fear and Intimidation, Pedestrian Delay, Pedestrian Amenity	Severance effects would only occur during school hours and during the school term. Whilst it is acknowledged that the school is not directly accessed via Link 4.1, it is likely that the footways on this link would be used during pick up and drop off periods. In order to reduce the effect of severance and as outlined in the OCTMP (Document 7.5), routeing of HGVs along sections of highway links where schools/colleges are present would be avoided, if necessary, during typical pick up and drop off periods.	Low	Minor (**Not Significant**)
Coleg Menai Llangefni	High	Severance, Fear and Intimidation, Pedestrian Delay, Pedestrian Amenity	Effects would only occur during school hours and during the school term. Whilst it is acknowledged that the school is not directly accessed via Link 4.1, it is likely that the footways on this link would be used during pick up and drop off periods. In order to reduce the effect of severance and as outlined in the OCTMP (Document 7.5), routeing of HGVs along sections of highway links where schools/colleges are present would be avoided, if necessary, during typical pick up and drop off periods.	Low	Minor (**Not Significant**)
Sant Tysilio Nursing Home	High	Severance, Fear and Intimidation	No specific mitigation required	Low	Minor (**Not Significant**)
		Pedestrian Delay, Pedestrian Amenity	No specific mitigation required	Very Low	Negligible (**Not Significant**)
Ysgol Gynradd Cemaes	High	Severance, Fear and Intimidation, Pedestrian Delay, Pedestrian Amenity	No specific mitigation required	Low	Minor (**Not Significant**)
NCR 566 (affected by Highway Link Ref 1)	Medium	Public Rights of Way	No specific mitigation required	Low	Minor (**Not Significant**)

Table 13.41 Potential Traffic Effects of the Proposed Development					
Resource/Receptor	Sensitivity Value	Potential effects.	Mitigation	Residual Magnitude	Residual Significance
NCR 566 (affected by Highway Link Ref 4)	Medium	Public Rights of Way	No specific mitigation required	Low	Minor (**Not Significant**)
NCR5 (affected by Highway Link Ref 5)	Medium	Public Rights of Way	No specific mitigation required	Low	Minor (**Not Significant**)
NCR 566 (affected by Highway Link Ref 7)	Medium	Public Rights of Way	No specific mitigation required	Low	Minor (**Not Significant**)
NCR 566 (affected by Highway Link Ref 7.1)	Medium	Public Rights of Way	Relevant highway link identified as a Contingency Route for construction traffic to OHL compound, unlikely to be fully used to the level assessed	Low	Minor (**Not Significant**)
NCR 8 (affected by Link Ref 11.1)	Medium	Public Rights of Way	Relevant highway link identified as a Contingency Route for construction traffic to OHL compound, unlikely to be fully used to the level assessed	Low	Minor (**Not Significant**)
NCR 8 (affected by Link Ref 14)	Medium	Public Rights of Way	Relevant highway link identified as a Contingency Route for tunnelling elements only, so unlikely to be fully used to the level assessed Results for Tunnelling Scenario 2 would reduce magnitude and significance.	Low	Minor (**Not Significant**)
Wales Coast Path (affected by Link Ref 16)	High	Public Rights of Way	Relevant highway link identified as a Contingency Route for tunnelling elements only, so unlikely to be fully used to the level assessed Results for Tunnelling Scenario 2 would reduce magnitude and significance. Short, managed diversion (less than 5 minutes additional journey time) as specified in the PRoW Management Plan (**Document 7.6**)	Minor	Minor (**Not Significant**)

Table 13.41 Potential Traffic Effects of the Proposed Development					
Resource/Receptor	Sensitivity Value	Potential effects.	Mitigation	Residual Magnitude	Residual Significance
Pentir Rhif 111 (affected by Link Ref 19)	Medium	Public Rights of Way	No specific mitigation	Low	Minor (**Not Significant**)