XLINKS' MOROCCO-UK POWER PROJECT

Environmental Statement

Volume 2, Chapter 5: Traffic and Transport

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Glossary

Term	Meaning
Abnormal Indivisible Loads	Loads or vehicles that exceed maximum vehicle weight, axle weight or dimensions as set out in the Road Vehicles (Construction and Use) Regulations 1986 as amended.
AIL route works	Potential minor works to the Abnormal Indivisible Loads (AIL) routes, which are required for the transportation of the transformers and cable drums. The proposed AIL route runs from Appledore to the Onshore Infrastructure Area.
Alverdiscott Substation	The existing National Grid Electricity Transmission substation at Alverdiscott, Devon, which comprises 400 kV and 132 kV electrical substation equipment.
Alverdiscott Substation Connection Development	The development required at the existing Alverdiscott Substation Site, which is envisaged to include development of a new 400 kV substation, and other extension modification works to be carried out by National Grid Electricity Transmission. This does not form part of the Proposed Development; however, it is considered cumulatively within the Environmental Impact Assessment as it is necessary to facilitate connection to the national grid.
Alverdiscott Substation Site	The National Grid Electricity Transmission site within which the Alverdiscott Substation sits.
Applicant	Xlinks 1 Limited.
Baseline	The status of the environment without the Proposed Development in place.
Construction Traffic Management Plan	A document detailing the construction traffic routes for heavy goods vehicles and personnel travel, protocols for delivery of Abnormal Indivisible Loads to site, measures for road cleaning and sustainable site travel measures.
Converter Site	The Converter Site is proposed to be located to the immediate west of the existing Alverdiscott Substation Site in north Devon. The Converter Site would contain two converter stations (known as Bipole 1 and Bipole 2) and associated infrastructure, buildings and landscaping.
Converter station	Part of an electrical transmission and distribution system. Converter stations convert electricity from Direct Current to Alternating Current, or vice versa.
Cumulative Effects	The combined effect of the Proposed Development in combination with the effects from other planning applications, on the same receptor or resource.
Development Consent Order	An order made under the Planning Act 2008, as amended, granting development consent.
Duration (of impact)	The time over which an impact occurs. An impact may be described as short, medium or long-term and permanent or temporary.
Effect	The term used to express the consequence of an impact. The significance of effect is determined by correlating magnitude of the impact with the importance, or sensitivity, of the receptor or resource in accordance with defined significance criteria.
Environmental Impact Assessment	The process of identifying and assessing the significant effects likely to arise from a project. This requires consideration of the likely changes to the environment, where these arise as a consequence of a project, through comparison with the existing and projected future baseline conditions.
Environmental Statement	The document presenting the results of the Environmental Impact Assessment process.
Frequency (of impact)	The number of times an impact occurs across the relevant phase/lifetime of a project.
Horizontal Directional Drilling	Horizontal Directional Drilling (HDD) is a method of installing underground pipelines, cables and service conduit (or ducts) through trenchless methods to avoid obstacles and sensitive features (e.g. roads, watercourses, woodlands,

Term	Meaning
	etc.). The term HDD is used here interchangeably with other similar trenchless techniques but excluding micro tunnelling or direct pipe methods.
Impact	Change that is caused by an action/proposed development, e.g., land clearing (action) during construction which results in habitat loss (impact).
Inter-related effects	Multiple effects on the same receptor as a result of the Proposed Development. These occur when a series of the same effect acts on a receptor over time to produce a potential additive effect or where a number of separate effects, such as noise and habitat loss, affect a single receptor.
Landfall	The proposed area in which the offshore cables make landfall in the United Kingdom (come on shore) and the transitional area between the offshore cabling and the onshore cabling. This term applies to the entire landfall area at Cornborough Range, Devon, between Mean Low Water Springs and the transition joint bays inclusive of all construction works, including the offshore and onshore cable routes, and landfall compound(s).
Local Highway Authority	A body responsible for the public highways in a particular area of England and Wales, as defined in the Highways Act 1980. The relevant Local Highway Authority for the Proposed Development is Devon County Council.
Local Planning Authority	The local government body (e.g., Borough Council, District Council, etc.) responsible for determining planning applications within a specific area.
Maximum Design Scenario	The realistic worst-case scenario, selected on a topic-specific and impact specific basis, from a range of potential parameters for the Proposed Development.
Mean Low Water Springs	The height of mean low water during spring tides in a year.
National Policy Statement(s)	The current national policy statements published by the Department for Energy Security and Net Zero in 2023, and adopted in 2024.
Onshore HVDC Cable Corridor	The proposed corridor within which the onshore High Voltage Direct Current cables would be located.
Onshore Infrastructure Area	The proposed infrastructure area within the Order Limits landward of Mean High Water Springs. The Onshore Infrastructure Area comprises the transition joint bays, onshore HVDC Cables, converter stations, HVAC Cables, highways improvements, utility diversions and associated temporary and permanent infrastructure including temporary compound areas and permanent accesses.
Order Limits	The area within which all offshore and onshore components of the Proposed Development are proposed to be located, including areas required on a temporary basis during construction (such as construction compounds).
Planning Inspectorate	The agency responsible for operating the planning process for applications for development consent under the Planning Act 2008.
Policy	A set of decisions by governments and other political actors to influence, change, or frame a problem or issue that has been recognized as in the political realm by policy makers and/or the wider public.
Preliminary Environmental Information Report	A report that provides preliminary environmental information in accordance with the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017. This is information that enables consultees to understand the likely significant environmental effects of a project, and which helps to inform consultation responses.
Proposed Development	The element of Xlinks' Morocco-UK Power Project within the UK. The Proposed Development covers all works required to construct and operate the offshore cables (from the UK Exclusive Economic Zone to Landfall), Landfall, onshore Direct Current and Alternating Current cables, converter stations, and highways improvements.
Receptor	The element of the receiving environment that is affected.

Term	Meaning
Special Order	A legal document issued by the Department for Transport to permit certain Abnormal Indivisible Loads to move along the highway.
Statutory consultee	Organisations that are required to be consulted by an applicant pursuant to section 42 of the Planning Act 2008 in relation to an application for development consent.
Study area	This is an area which is defined for each environmental topic which includes the Order Limits as well as potential spatial and temporal considerations of the impacts on relevant receptors. The study area for each topic is intended to cover the area within which an impact can be reasonably expected.
Survey area	The area within which each survey has been undertaken. This may differ from the study area as a survey area will be based on species or survey-specific guidance on the extent of survey required, which may be limited by, for example, habitat conditions, or be defined in terms of buffer areas around an area of potential impact.
The national grid	The network of power transmission lines which connect substations and power stations across Great Britain to points of demand. The network ensures that electricity can be transmitted across the country to meet power demands.
Transboundary effects	Effects from a project within one state that affect the environment of another state(s).
Transport Assessment	A transport assessment is a comprehensive and systematic process that sets out transport issues relating to a proposed development. It identifies what measures will be taken to deal with the anticipated transport impacts of the scheme and to improve accessibility and safety for all modes of travel, particularly for alternatives to the car such as walking, cycling and public transport.
Xlinks' Morocco UK Power Project	The overall scheme from Morocco to the national grid, including all onshore and offshore elements of the transmission network and the generation site in Morocco (referred to as the 'Project').

Acronyms

Acronym	Meaning
AADT	Annual Average Daily Traffic
AIL	Abnormal Indivisible Load
ATC	Automatic Traffic Counter
CEA	Cumulative Effects Assessment
CTMP	Construction Traffic Management Plan
DCC	Devon County Council
DCO	Development Consent Order
DESNZ	Department for Energy Security and Net Zero
DfT	Department for Transport
DLHC	Department for Levelling Up, Housing and Communities
DMRB	Design Manual for Roads and Bridges
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
ES	Environmental Statement
HDD	Horizontal Directional Drilling

Acronym	Meaning
HDV	Heavy Duty Vehicles
HGV	Heavy Goods Vehicle
IEMA	Institute for Environmental Management and Assessment
LPA	Local Planning Authority
LRN	Local Road Network
MCC	Manual Classified Count
MDS	Maximum Design Scenario
MHCLG	Ministry of Housing, Community and Local Government
MLWS	Mean Low Water Springs
NCN	National Cycle Network
NPPF	National Planning Policy Framework
NPS	National Policy Statement
PEIR	Preliminary Environmental Information Report
PIA	Personal Injury Accident
PPG	Planning Practice Guidance
PRoW	Public Right of Way
SRN	Strategic Road Network
TAG	Transport Analysis Guidance
TDC	Torridge District Council
UK	United Kingdom
ZoI	Zone of Influence

Units

Acronym	Meaning
km	Kilometre
km^2	Square Kilometre
m	Metre
m^2	Square Metre
mph	Miles per hour
%	Percent

5 TRAFFIC AND TRANSPORT

5.1 Introduction

5.1.1 This chapter of the Environmental Statement (ES) presents the findings of the Environmental Impact Assessment (EIA) undertaken for the United Kingdom (UK) elements of the Xlinks' Morocco-UK Power Project (the 'Project'). For ease of reference, the UK elements of the Project are referred to in this chapter as the 'Proposed Development'. The ES accompanies the application to the Planning Inspectorate for development consent for the Proposed Development.

5.1.2 This chapter considers the likely impacts and effects of the Proposed Development on traffic and transport receptors during the construction phase. Specifically, it relates to the onshore elements of the Proposed Development landward of Mean Low Water Springs (MLWS). The potential impacts and effects of the Proposed Development on traffic and transport receptors during the operation and maintenance and decommissioning phases have been scoped out of the assessment.

5.1.3 In particular, this ES chapter:

- identifies the key legislation, policy and guidance relevant to traffic and transport;
- details the EIA scoping and consultation process undertaken to date for traffic and transport;
- confirms the study area for the assessment, the methodology used to identify baseline environmental conditions, the impact assessment methodology, and identifies any assumptions and limitations encountered in compiling the environmental information;
- sets out the existing and future environmental baseline conditions, established from desk studies, surveys and consultation;
- details the mitigation and/or monitoring measures that are proposed to prevent, minimise, reduce or offset the possible environmental effects identified in the EIA process;
- defines the project design parameters used to inform the impact assessment;
- presents an assessment of the likely impacts and effects in relation to the construction phase of the Proposed Development on traffic and transport receptors; and
- identifies any cumulative, transboundary and/or inter-related effects in relation to the construction phase of the Proposed Development on traffic and transport receptors.

5.1.4 This ES chapter also integrates the contents of a 'Transport Assessment' (TA) to consider the potential impacts and effects on the operation of the highway network arising from the Proposed Development.

5.1.5 The assessment presented is informed by the following technical chapters and should be read in conjunction with:

- Volume 1, Chapter 3: Project Description of the ES.

5.1.6 This chapter also draws upon additional information to support the assessment contained within:

- Volume 2, Appendix 5.1: Site-Specific Traffic Surveys;
- Volume 2, Appendix 5.2: Personal Injury Accident Data;
- Volume 2, Appendix 5.3: Construction Traffic Generation;
- Volume 2, Appendix 5.4: Assessment Calculations;
- Volume 2, Appendix 5.5: Junctions 10 Modelling Results; and
- Volume 2, Appendix 5.6: Indicative Access Designs

5.2 Legislative and Policy Context

Legislation

5.2.1 This section provides a description of the main legislation relevant to traffic and transport, including the Highways Act (1980), the Transport Act (2000), the Local Transport Act (2008), New Roads and Street Works Act (1991), Traffic Management Act (2004) and Road Traffic Regulation Act (1984).

Highways Act (1980)

5.2.2 The Highways Act (1980) sets out the powers and duties of highway authorities and the responsibilities of highway authorities to maintain the public highway network in a condition which is safe for all users.

Transport Act (2000)

5.2.3 The Transport Act (2000) includes measures to create a more integrated transport system and aims to improve local passenger transport services and reduce both road congestion and pollution.

Local Transport Act (2008)

5.2.4 The Local Transport Act (2008) includes measures to improve the quality of local bus services and address increasing road congestion through a statutory requirement for all highway authorities to have a Local Transport Plan as part of a more consistent approach to local transport policies and planning.

New Roads and Street Works Act (1991)

5.2.5 The New Roads and Street Works Act (1991) enables new roads to be provided, to make new provision with respect to street works and provides a legislative framework for street works by undertakers. The aim of the New Roads and Street Works Act is to balance the statutory rights of highway authorities (street authorities) and undertakers (such as utility companies) to carry out works with the right of road users to expect the minimum disruption from works.

Traffic Management Act (2004)

5.2.6 The Traffic Management Act (2004) sets out how road networks should be managed by local authorities and includes regulations for roadworks.

Road Traffic Regulation Act (1984)

5.2.7 The Road Traffic Regulation Act (1984) provides powers to regulate or restrict traffic on roads in Great Britain, in the interest of safety.

Planning Policy Context

5.2.8 The Proposed Development would be located within the UK Exclusive Economic Zone (EEZ) offshore waters (beyond 12 nautical miles (nm) from the English coast) and inshore waters, with the onshore infrastructure proposed to be located wholly within Devon, England. As set out in Volume 1, Chapter 1: Introduction of the ES, the Secretary of State for the Department for Energy Security and Net Zero (DESNZ) has directed that elements of the Proposed Development are to be treated as development for which development consent is required under the Planning Act 2008, as amended.

National Policy Statements

5.2.9 There are currently six energy National Policy Statements (NPSs), three of which contain policy relevant to the Proposed Development, specifically:

- Overarching NPS for Energy (NPS EN-1) which sets out the UK Government's policy for the delivery of major energy infrastructure (Department for Energy Security & Net Zero 2023a);
- NPS for Renewable Energy Infrastructure (NPS EN-3) (Department for Energy Security & Net Zero 2023b); and
- NPS for Electricity Networks Infrastructure (NPS EN-5) (Department for Energy Security & Net Zero 2023c).

5.2.10 **Table 5.1** sets out key aspects from the NPSs relevant to the Proposed Development, with particular reference to the need for and approach to consenting such infrastructure.

Table 5.1: Summary of relevant NPS policy

Summary of NPS requirement	How and where considered in the ES
NPS EN-1	
The transport of materials, goods and personnel to and from a development during all project phases can have a variety of impacts on the surrounding transport infrastructure and potentially on connecting transport networks, for example through increased congestion. Impacts may include economic, social and environmental effects. [Paragraph 5.14.1 of NPS EN-1].	The relevant potential traffic and transport impacts from the transport of materials, goods and personnel to and from the Onshore Infrastructure Area during the construction phase of the Proposed Development are considered in **section 5.10** of this ES chapter, while mitigation measures are set out in **section 5.8** of this ES chapter. This ES chapter contains an integrated TA in **section 5.10** to consider the potential impacts and effects of the transport of materials, goods and personnel to and from

Summary of NPS requirement	How and where considered in the ES
Environmental impacts may result particularly from trips generated on roads which may increase noise and air pollution as well as greenhouse gas emissions. [Paragraph 5.14.2 of NPS EN-1]. Disturbance caused by traffic and abnormal loads generated during the construction phase will depend on the scale and type of the proposal. [Paragraph 5.14.3 of NPS EN-1].	the Onshore Infrastructure Area during the construction phase of the Proposed Development on the operation of the highway network, including driver delay at particular junctions. An analysis of PIAs within the study area has been undertaken in **section 5.7** of this ES chapter. The traffic and transport impact of the Proposed Development on highway safety has been considered in **section 5.10** of this ES chapter. The traffic and transport study area has been established to include all relevant routes of the transport network (see **section 5.4**). Noise is considered in Volume 2, Chapter 6: Noise and Vibration of the ES. Emissions are considered in Volume 2, Chapter 7: Air Quality of the ES. The number of AIL movements will be low and each load will be present on the highway network for a short period of time, with standard measures (including traffic management measures) applied in terms of route, timing and method of delivery to minimise delays to other highway users. The impact and disturbance of AILs across the highway network within the study area is considered in **section 5.10** of this ES chapter.
The consideration and mitigation of transport impacts is an essential part of Government's wider policy objectives for sustainable development as set out in Section 2.6 of this NPS. [Paragraph 5.14.4 of NPS EN-1].	The mitigation measures relevant to this ES chapter are summarised in **Table 5.21** and those relating to the final version of the CTMP(s) to be developed through ongoing discussions with DCC are set out in **Table 5.22**. Embedded measures that will form part of the final design (and/or are established legislative requirements/good practice) have been taken into account as part of the initial assessment presented in **section 5.10.** This ensures that the measures to which the Applicant is committed are taken into account in the assessment of effects.
If a project is likely to have significant transport implications, the applicant's Environmental Statement should include a transport appraisal. The Department for Transport's (DfT's) Transport Analysis Guidance (TAG) and Welsh Government's WelTAG provides guidance on modelling and assessing the impacts of transport schemes. [Paragraph 5.14.5 of NPS EN-1].	This ES chapter contains an integrated TA in **Section 5.10** to consider the potential impacts and effects of the construction phase of the Proposed Development on the operation of the highway network, in accordance with relevant parts of the DfT's TAG, guidance and best practice.
National Highways and Highways Authorities are statutory consultees on Nationally Significant Infrastructure Project applications including energy infrastructure where it is expected to affect the Strategic Road Network (SRN) and/or have an impact on the local road network. Applicants should consult with National Highways and Highways Authorities as	Devon County Council as the relevant Local Highway Authority has been consulted as set out in **section 5.3** of this ES chapter, with the discussions informing the assessment and mitigation.

Summary of NPS requirement	How and where considered in the ES
appropriate on the assessment and mitigation to inform the application to be submitted. [Paragraph 5.14.6 of NPS EN-1].	
The applicant should prepare a Travel Plan including demand management and monitoring measures to mitigate transport impacts. The applicant should also provide details of proposed measures to improve access by active, public and shared transport to reduce the need for parking associated with the proposal, contribute to decarbonisation of the transport network and improve user travel options by offering genuine modal choice. [Paragraph 5.14.7 of NPS EN-1].	The available public transport adjacent to and within the Onshore Infrastructure Area and the existing walking and cycling infrastructure adjacent to and within the Onshore Infrastructure Area is set out in **section 5.7** of this ES chapter. This shows the sustainable transport options available to construction staff of the Proposed Development, which will be set out in the final version of the CTMP(s). Where appropriate, it is expected that movement by sustainable modes of transport will be facilitated and encouraged during the construction phase of the Proposed Development through the final version of the CTMP(s). All construction staff working at the onshore HVDC Cable Corridor to the west of the River Torridge would travel to the temporary construction compound before onward travel by minibus to other work fronts in the Onshore Infrastructure Area to reduce the need for parking associated with the Proposed Development and improve user travel options. The construction staff would not have time to leave site at lunchtime and travel to nearby facilities such as food and drink outlets for lunch, so catering and welfare facilities will be provided at the main construction compound to the north of Abbotsham Cross roundabout and at the Converter Stations to reduce travel across the highway network. An Outline Construction Traffic Management Plan (CTMP), which includes demand management measures during the construction phase of the Proposed Development, such as encouraging car sharing between construction staff, has been prepared. The Outline CTMP is a live document during the examination process and the demand management measures included can be amended if required. The final version of the CTMP(s) will be completed following development consent of the Project. The measures in the Outline CTMP set out in **Table 5.22** of this ES chapter are typical of measures used for other similar types of projects and are considered to be achievable.
The assessment should also consider any possible disruption to services and infrastructure (such as road, rail and airports). [Paragraph 5.14.8 of NPS EN-1].	This ES chapter contains an integrated TA in **section 5.10** to consider the potential impacts and effects of the transport of materials, goods and personnel to and from the Onshore Infrastructure Area during the construction phase of the Proposed Development on the operation of the highway network, including driver delay at particular junctions, in accordance with relevant parts of the DfT's TAG, guidance and best practice.

Summary of NPS requirement	How and where considered in the ES
If additional transport infrastructure is needed or proposed, it should always include good quality walking, wheeling and cycle routes, and associated facilities (changing/storage etc) needed to enhance active transport provision. [Paragraph 5.14.9 of NPS EN-1]. Applicants should discuss with network providers the possibility of co-funding by government for any third-party benefits. Guidance has been issued which explains the circumstances where this may be possible, although the government cannot guarantee in advance that funding will be available for any given uncommitted scheme at any specified time. [Paragraph 5.14.10 of NPS EN-1].	Additional transport infrastructure for construction of the Proposed Development is limited to the provision of several mostly temporary construction accesses within the Onshore Infrastructure Area (all but one access being an improvement to an existing access, as set out in **section 5.9**). These accesses will be removed/the land reinstated when construction of the Proposed Development is finished. The accesses to be used for operation and maintenance purposes will be used on a limited and irregular basis and will not be for public use. During the construction phase of the Proposed Development, parts of Gammaton Road and the unnamed road towards the Converter Site will be permanently widened, as set out in **section 5.9**. The construction staff would not have time to leave site at lunchtime and travel to nearby facilities such as food and drink outlets for lunch, so catering and welfare facilities will be provided at the main construction compound to the north of Abbotsham Cross roundabout and at the Converter Stations to reduce travel across the highway network.
Where mitigation is needed, possible demand management measures must be considered. This could include identifying opportunities to reduce the need to travel by consolidating trips, locate development in areas already accessible by active travel and public transport, provide opportunities for shared mobility, re-mode by shifting travel to a sustainable mode that is more beneficial to the network, retime travel outside of the known peak times and reroute to use parts of the network that are less busy. [Paragraph 5.14.11 of NPS EN-1].	An Outline CTMP, which includes demand management measures during the construction phase of the Proposed Development, has been prepared. The Outline CTMP is a live document during the examination process and the demand management measures included can be amended if required. The final version of the CTMP(s) will be completed following development consent of the Project. The measures in the Outline CTMP set out in **Table 5.22** of this ES chapter are typical of measures used for other similar types of projects and are considered to be achievable. The demand management measures for the construction phase of the Proposed Development include the routeing and timing of Heavy Goods Vehicle (HGV) movements and the management of construction staff movements outside of highway network peak times and encouraging car sharing between construction staff and are not expected to require any new inland transport infrastructure, apart from temporary construction accesses within the Onshore Infrastructure Area. These demand management measures will be secured in the final version of the CTMP(s). All construction staff working at the onshore HVDC Cable Corridor to the west of the River Torridge would travel to the temporary construction compound before onward travel by minibus to other work fronts in the Onshore Infrastructure Area to reduce the need for parking associated with the Proposed Development and improve user travel options.

Summary of NPS requirement	How and where considered in the ES
	The construction staff would not have time to leave site at lunchtime and travel to nearby facilities such as food and drink outlets for lunch, so catering and welfare facilities will be provided at the main construction compound to the north of Abbotsham Cross roundabout and at the Converter Stations to reduce travel across the highway network. The available public transport adjacent to and within the Onshore Infrastructure Area and the existing walking and cycling infrastructure adjacent to and within the Onshore Infrastructure Area is set out in **section 5.7** of this ES chapter. This shows the sustainable transport options available to construction staff of the Proposed Development which will be set out in the final version of the CTMP(s).
If feasible and operationally reasonable, such mitigation should be required, before considering requirements for the provision of new inland transport infrastructure to deal with remaining transport impacts. All stages of the project should support and encourage a modal shift of freight from road to more environmentally sustainable alternatives, such as rail, cargo bike, maritime and inland waterways, as well as making appropriate provision for and infrastructure needed to support the use of alternative fuels including charging for electric vehicles. [Paragraph 5.14.12 of NPS EN-1].	All relevant traffic and transport mitigation measures have been considered in **section 5.8** of this ES chapter and are not expected to require any new inland transport infrastructure, apart from temporary construction accesses within the Onshore Infrastructure Area which will be required irrespective of any modal shift of freight from road to more environmentally sustainable alternatives. Embedded measures that will form part of the final design (and/or are established legislative requirements/good practice) have been taken into account as part of the initial assessment presented in **section 5.10.** This ensures that the measures to which the Applicant is committed are taken into account in the assessment of effects.
Regard should always be given to the needs of freight at all stages in the construction and operation of the development including the need to provide appropriate facilities for HGV drivers as appropriate. [Paragraph 5.14.13 of NPS EN-1].	All accesses within the Onshore Infrastructure Area have been designed to safely accommodate HGV movements and all temporary construction compounds will provide welfare facilities, as set out in the Outline CTMP. HGV routes have been identified in **section 5.9** and associated mitigation measures, such as restrictions of the timings of HGV movements to avoid adverse impacts on sensitive receptors, are set out in the Outline CTMP. All temporary construction compounds will provide appropriate provisions for HGVs to ensure no impact upon the highway.
The Secretary of State may attach requirements to a consent where there is likely to be substantial HGV traffic that control numbers of HGV movements to and from the site in a specified period during its construction and possibly on the routing of such movements; make sufficient provision for HGV parking and associated high quality drive facilities either on the site or at dedicated facilities elsewhere, to support driver welfare, avoid 'overspill' parking on public road, prolonged queuing on approach	HGV routes have been identified in **section 5.9** and associated mitigation measures, such as restrictions of the timings of HGV movements to avoid adverse impacts on sensitive receptors, are set out in the Outline CTMP. All temporary construction compounds will provide appropriate provisions for HGVs to ensure no impact upon the highway. The number of AIL movements will be low and each load will be present on the highway network for a short period of time, with standard measures (including traffic

Summary of NPS requirement	How and where considered in the ES
roads and uncontrolled on-street HGV parking in normal operating conditions; and ensure satisfactory arrangements for reasonably foreseeable abnormal disruption, in consultation with network providers and the responsible police force. [Paragraph 5.14.14 of NPS EN-1].	management measures) applied in terms of route, timing and method of delivery to minimise delays to other highway users. The impact and disturbance of AILs across the highway network within the study area is considered in **section 5.10** of this ES chapter.
The Secretary of State should have regard to the cost effectiveness of demand management measures compared to new transport infrastructure, as well as the aim to secure more sustainable patterns of transport development when considering mitigation measures. [Paragraph 5.14.15 of NPS EN-1].	An Outline CTMP, which includes demand management measures during the construction phase of the Proposed Development, such as encouraging car sharing between construction staff, has been prepared. The Outline CTMP is a live document during the examination process and the demand management measures included can be amended if required. The final version of the CTMP(s) will be completed following development consent of the Project. The measures in the Outline CTMP set out in **Table 5.22** of this ES chapter are typical of measures used for other similar types of projects and are considered to be achievable. Additional transport infrastructure for construction of the Proposed Development is limited to the provision of several mostly temporary construction accesses within the Onshore Infrastructure Area (all but one being an improvement to an existing access, as set out in **section 5.9**). These accesses will be removed/the land reinstated when construction of the Proposed Development is finished. The accesses to be used for operation and maintenance purposes will be used on a limited and irregular basis and will not be for public use. All relevant traffic and transport mitigation measures have been considered in **section 5.8** of this ES chapter and are not expected to require any new inland transport infrastructure, apart from temporary construction accesses within the Onshore Infrastructure Area which will be required irrespective of any modal shift of freight from road to more environmentally sustainable alternatives. Embedded measures that will form part of the final design (and/or are established legislative requirements/good practice) have been taken into account as part of the initial assessment presented in **section 5.10**. This ensures that the measures to which the Applicant is committed are taken into account in the assessment of effects.
Applicants should consider the DfT policy guidance 'Water Preferred Policy Guidelines for the movement of abnormal indivisible loads' when preparing their application. [Paragraph 5.14.16 of NPS EN-1].	The number of AIL movements will be low and each load will be present on the highway network for a short period of time, with standard measures (including traffic management measures) applied in terms of route, timing and method of delivery to minimise delays to other highway users. The impact and disturbance of AILs across the highway network within the study area is considered in **section 5.10** of this ES chapter. The Outline CTMP includes management measures for all AILs.

Summary of NPS requirement	How and where considered in the ES
If an applicant suggests that the costs of meeting any obligations or requirements would make the proposal economically unviable this should not in itself justify the relaxation by the Secretary of State of any obligations or requirements needed to secure the mitigation. [Paragraph 5.14.17 of NPS EN-1].	The costs of transport mitigation currently envisaged by the Applicant will not make the Proposed Development economically unviable. Following the assessment as set out in **section 5.10** of this ES chapter, the nature of the residual likely significant effects is such that no planning obligations are considered necessary.
A new energy Nationally Significant Infrastructure Project may give rise to substantial impacts on the surrounding transport infrastructure and the Secretary of State should therefore ensure that the applicant has sought to mitigate these impacts, including during the construction phase of the development and by enhancing active, public, and shared transport provision and accessibility. [Paragraph 5.14.18 of NPS EN-1]. Where the proposed mitigation measures are insufficient to reduce the impact on the transport infrastructure to acceptable levels, the Secretary of State should consider requirements to mitigate adverse impacts on transport networks arising from the development, as set out below. [Paragraph 5.14.19 of NPS EN-1].	The relevant potential traffic and transport impacts from the transport of materials, goods and personnel to and from the Onshore Infrastructure Area during the construction phase of the Proposed Development are considered in **section 5.10** of this ES chapter. The potential traffic and transport impacts during the operation and maintenance and decommissioning phases of the Proposed Development have been scoped out of the assessment, as set out in **Table 5.7** of this ES chapter. Where appropriate, it is expected that movement by sustainable modes of transport will be facilitated and encouraged during the construction phase of the Proposed Development through the final version of the CTMP(s). All relevant traffic and transport mitigation measures have been considered in **section 5.8** of this ES chapter and are not expected to require any new inland transport infrastructure, apart from temporary construction accesses within the Onshore Infrastructure Area which will be required irrespective of any modal shift of freight from road to more environmentally sustainable alternatives. Embedded measures that will form part of the final design (and/or are established legislative requirements/good practice) have been taken into account as part of the initial assessment presented in **section 5.10.** This ensures that the measures to which the Applicant is committed are taken into account in the assessment of effects.
Development consent should not be withheld provided that the applicant is willing to enter into planning obligations for funding new infrastructure or requirements can be imposed to mitigate transport impacts. In this situation the Secretary of State should apply appropriately limited weight to residual effects on the surrounding transport infrastructure. [Paragraph 5.14.20 of NPS EN-1].	All relevant traffic and transport mitigation measures have been considered in **section 5.8** of this ES chapter and are not expected to require any new inland transport infrastructure, apart from temporary construction accesses within the Onshore Infrastructure Area which will be required irrespective of any modal shift of freight from road to more environmentally sustainable alternatives. Embedded measures that will form part of the final design (and/or are established legislative requirements/good practice) have been taken into account as part of the initial assessment presented in **section 5.10.** This ensures that the measures to which the Applicant is committed are taken into account in the assessment of effects.

Summary of NPS requirement	How and where considered in the ES
	Following the assessment as set out in **section 5.10** of this ES chapter, the nature of the residual likely significant effects is such that no planning obligations are considered necessary.
The Secretary of State should only consider refusing development on highways grounds if there would be an unacceptable impact on highway safety, residual cumulative impacts on the road network would be severe, or it does not show how consideration has been given to the provision of adequate active public or shared transport access and provision. [Paragraph 5.14.21 of NPS EN-1].	The relevant potential traffic and transport impacts from the transport of materials, goods and personnel to and from the Onshore Infrastructure Area during the construction phase of the Proposed Development are considered in **section 5.10** of this ES chapter. The potential traffic and transport impacts during the operation and maintenance and decommissioning phases of the Proposed Development have been scoped out of the assessment, as set out in **Table 5.7** of this ES chapter. The assessment presented in this chapter of the ES concludes that there will be no significant effects arising from the Proposed Development during the construction phase, as set out in **section 5.14**.

The National Planning Policy Framework

5.2.11 The National Planning Policy Framework (NPPF) was published in 2012 and updated in 2018, 2019, 2021, 2023 and 2024 (Ministry of Housing, Communities and Local Government, 2024). The NPPF sets out the Government's planning policies for England.

5.2.12 The NPPF has been updated and the draft version was published for consultation on 30 July 2024 with the consultation period ending on 24 September 2024 (Ministry of Housing, Communities and Local Government, 2024). Following consultation, the NPPF will be updated.

5.2.13 **Table 5.2** sets out a summary of the NPPF policies relevant to this chapter.

Table 5.2: Summary of NPPF requirements relevant to this chapter

Policy	Key provisions	How and where considered in the ES
Paragraph 106	Transport issues should be considered from the earliest stages of development proposals, so that: • the potential impacts of development on transport networks can be addressed; • opportunities from existing or proposed transport infrastructure, and changing transport technology and usage, are realised – for example in relation to the scale, location or density of development that can be accommodated; • opportunities to promote walking, cycling and public transport use are identified and pursued; and	This ES chapter considers all relevant potential traffic and transport impacts during the construction phase of the Proposed Development. All mitigation measures required in relation to traffic and transport to be adopted as part of the Proposed Development are set out in **section 5.8** of this ES chapter. Additional transport infrastructure for construction of the Proposed Development is limited to the provision of several mostly temporary construction accesses within the Onshore Infrastructure Area (all but one being an improvement to an existing access, as set out in **section 5.9**). These accesses will be removed/the land reinstated when

Policy	Key provisions	How and where considered in the ES
	• the environmental impacts of traffic and transport infrastructure can be identified, assessed and taken into account – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains	construction of the Proposed Development is finished. The accesses to be used for operation and maintenance purposes will be used on a limited and irregular basis and will not be for public use. The available public transport adjacent to and within the Onshore Infrastructure Area and the existing walking and cycling infrastructure adjacent to and within the Onshore Infrastructure Area is set out in **section 5.7** of this ES chapter. This shows the sustainable transport options available to construction staff of the Proposed Development Where appropriate, it is expected that movement by sustainable modes of transport will be facilitated and encouraged through the final version of the CTMP(s). An Outline CTMP, which includes demand management measures during the construction phase of the Proposed Development such as encouraging car sharing between construction staff, has been prepared. The relevant potential traffic and transport impacts during the construction phase of the Proposed Development are considered in **section 5.10** of this ES chapter, while mitigation measures are set out in **section 5.8** of this ES chapter.

Policy	Key provisions	How and where considered in the ES
Paragraph 107	The planning system should actively manage patterns of growth in support of these objectives. Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions and improve air quality and public health. However, opportunities to maximise sustainable transport solutions will vary between urban and rural areas, and this should be taken into account in decision-making.	The available public transport adjacent to and within the Onshore Infrastructure Area and the existing walking and cycling infrastructure adjacent to and within the Onshore Infrastructure Area is set out in **section 5.7** of this ES chapter. This shows the sustainable transport options available to construction staff of the Proposed Development. Where appropriate, it is expected that movement by sustainable modes of transport will be facilitated and encouraged. An Outline CTMP, which includes demand management measures during the construction phase of the Proposed Development such as encouraging car sharing between construction staff, has been prepared.
Paragraph 112	In assessing specific applications for development, it should be ensured that: • a vision led approach to promoting sustainable transport modes is taken, taking account of the type of development and its location; • safe and suitable access to the site can be achieved for all users; and • any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree.	The available public transport adjacent to and within the Onshore Infrastructure Area and the existing walking and cycling infrastructure adjacent to and within the Onshore Infrastructure Area is set out in **section 5.7** of this ES chapter. This shows the sustainable transport options available to construction staff of the Proposed Development. Where appropriate, it is expected that movement by sustainable modes of transport will be facilitated and encouraged. An Outline CTMP, which includes demand management measures during the construction phase of the Proposed Development such as encouraging car sharing between construction staff, has been prepared. All accesses within the Onshore Infrastructure Area have been designed to safely accommodate HGV movements. The relevant potential traffic and transport impacts during the construction phase of the Proposed Development are considered in **section 5.10** of this ES chapter, while mitigation measures are set out in **section 5.8** of this ES chapter.

Policy	Key provisions	How and where considered in the ES
		An analysis of Personal Injury Accidents (PIAs) within the study area has been undertaken in **section 5.7** of this ES chapter. The traffic and transport impact of the Proposed Development on highway safety has been considered in **section 5.10** of this ES chapter.
Paragraph 115	Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe, in all tested scenarios.	The relevant potential traffic and transport impacts during the construction phase of the Proposed Development are considered in **section 5.10** of this ES chapter, while mitigation measures are set out in **section 5.8** of this ES chapter. An analysis of PIAs within the study area has been undertaken in **section 5.7** of this ES chapter. The traffic and transport impact of the Proposed Development on highway safety has been considered in **section 5.10** of this ES chapter.
Paragraph 117	All developments that will generate significant amounts of movement should be required to provide a travel plan, and the application should be supported by a transport statement or transport assessment so that the likely impacts of the proposal can be assessed.	Where appropriate, it is expected that movement by sustainable modes of transport will be facilitated and encouraged. An Outline CTMP, which includes demand management measures during the construction phase of the Proposed Development such as encouraging car sharing between construction staff, has been prepared. This ES chapter contains an integrated TA to consider the potential impacts and effects of the Proposed Development on the operation of the highway network, in accordance with relevant parts of the DfT's TAG, guidance and best practice.

5.2.14 The draft NPPF includes similar provisions as the current designated NPPF. The draft NPPF has been reviewed and there are no material updates for traffic and transport.

Local Planning Policy

5.2.15 The onshore elements of the Proposed Development are located within the administrative area of Torridge District Council (TDC) as the Local Planning Authority (LPA) and Devon County Council (DCC) as the Local Highway Authority (LHA). The relevant local planning policies applicable to traffic and transport based on the extent of the study area for this assessment are summarised in **Table 5.3**.

Table 5.3: Summary of local planning policy relevant to this chapter

Policy	Key provisions	How and where considered in the ES
North Devon and Torridge Local Plan 2011-2031		
Policy ST10: Transport Strategy	The Transport Strategy for northern Devon will: (1) Provide good strategic connectivity by: • ensuring the operational effectiveness of the SRN (A361 and A30) and other strategic routes including the A39, linking the area to the national road network (M5 and A30) and to Exeter, Plymouth and Cornwall; • maintaining the function of the wider SRN serving northern Devon; • improving journey times and service quality on the Barnstaple-Exeter rail line linking northern Devon to Exeter and the wider rail network; • improving the strategic routes towards Ilfracombe along the A399 from Aller Cross and the B3230 from Barnstaple; • maintaining the function of Bideford as a commercial port and developing enhanced harbour facilities, including at Ilfracombe to support any future ferry service and operational hub for any future off-shore renewable energy schemes; • safeguarding routes and exploring opportunities for the reuse and reinstatement of former railway lines; • maintaining and enhancing the function and connectivity of the public rights of way network within northern Devon including the completion of the gap in the Tarka Trail between Willingcott and Knowle; and • locating freight generating development and local freight handling facilities close to the strategic road/rail network or Bideford port. (2) Meet the needs of local communities and visitors to the area by: • providing transport infrastructure that facilitates the delivery of proposed strategic extensions for housing and employment development and facilitates economic regeneration; • developing quality public and community transport networks (and supporting infrastructure) within and between Barnstaple and Bideford and	This ES chapter considers relevant potential traffic and transport impacts during the construction phase of the Proposed Development. All mitigation measures required in relation to traffic and transport to be adopted as part of the Proposed Development are set out in **section 5.8** of this ES chapter. Additional transport infrastructure for construction of the Proposed Development is limited to the provision of several mostly temporary construction accesses within the Onshore Infrastructure Area (all but one being an improvement to an existing access, as set out in **section 5.9**). These accesses will be removed/the land reinstated when construction of the Proposed Development is finished. The accesses to be used for operation and maintenance purposes will be used on a limited and irregular basis and will not be for public use. The available public transport adjacent to and within the Onshore Infrastructure Area and the existing walking and cycling infrastructure adjacent to and within the Onshore Infrastructure Area is set out in **section 5.7** of this ES chapter. This shows the sustainable transport options available to construction staff of the Proposed Development. Where appropriate, it is expected that movement by sustainable modes of transport will be facilitated and encouraged. An Outline CTMP, which includes demand management measures during the construction phase of the Proposed Development such as encouraging car sharing between construction staff, has been prepared. The relevant potential traffic and transport impacts during the construction phase of the Proposed Development are considered in **section 5.10** of this ES chapter, while mitigation measures are set out in **section 5.8** of this ES chapter. This ES chapter contains an integrated TA to consider the potential impacts and effects of the Proposed Development on the operation of the highway network, in accordance with relevant parts of the DfT's TAG, guidance and best practice.

Policy	Key provisions	How and where considered in the ES
	the networks linking these centres to northern Devon's main towns and rural communities where viable; • improving overall accessibility of northern Devon by providing a wide range of integrated practical and attractive travel options and improving interchanges for transfer between modes of travel; • developing quality strategic recreational routes and local pedestrian, cycle and bridleway networks and further integration and enhancement of the public rights of way network; • protecting and enhancing the function and safety of the road network; and • recognising transport impacts from the seasonal nature of traffic in northern Devon. (3) Reduce the environmental and social impacts of transport by: • reducing the need to travel by car and enabling alternative sustainable travel options as supported by the Local Transport Plan; • improving transport connectivity between rural communities and the main towns where viable; • requiring a Transport Assessment or a Transport Statement and a Travel Plan for developments that generate significant traffic movements; • actively managing car parking provision through type, capacity and charging to influence demand patterns; • developing traffic management schemes in the main towns; • maximising safety on transport networks through improvements to physical infrastructure design whilst conserving historic environment assets; • ensuring that access to new development is safe and appropriate; and • protecting the landscape character and ecological interest along the main and minor route(s).	All accesses within the Onshore Infrastructure Area have been designed to safely accommodate HGV movements.
Policy DM05: Highways	All development must ensure safe and well-designed vehicular access and egress, adequate parking and layouts	All accesses within the Onshore Infrastructure Area have been designed to safely accommodate HGV movements.

Policy	Key provisions	How and where considered in the ES
	which consider the needs and accessibility of all highway users including cyclists and pedestrians. All development shall protect and enhance existing public rights of way, footways, cycleways and bridleways and facilitate improvements to existing or provide new connections to these routes where practical to do so.	The design of the construction works will avoid the risk of HGVs parking along surrounding highway and will provide appropriate parking facilities for construction workers. The available public transport adjacent to and within the Onshore Infrastructure Area and the existing walking and cycling infrastructure adjacent to and within the Onshore Infrastructure Area is set out in **section 5.7** of this ES chapter. This shows the sustainable transport options available to construction staff of the Proposed Development. Where appropriate, it is expected that movement by sustainable modes of transport will be facilitated and encouraged. An Outline CTMP, which includes demand management measures during the construction phase of the Proposed Development such as encouraging car sharing between construction staff, has been prepared. Additional transport infrastructure for construction of the Proposed Development is limited to the provision of several mostly temporary construction accesses within the Onshore Infrastructure Area (all but one being an improvement to an existing access, as set out in **section 5.9**). These accesses will be removed/the land reinstated when construction of the Proposed Development is finished. The accesses to be used for operation and maintenance purposes will be used on a limited and irregular basis and will not be for public use.
Policy DM06: Parking Provision	Development proposals will be expected to provide an appropriate scale and range of parking provision to meet anticipated needs, having regard to the: • accessibility and sustainability of the site; • availability of public transport; • provision of safe walking and cycling routes; and • specific scale, type and mix of development. Proposals must encourage the use of sustainable modes of transport through careful design, layout and integration to the existing built form.	The parking proposals of the Proposed Development will be developed in accordance with these guidelines. The design of the construction works will avoid the risk of HGVs parking along surrounding highway and will provide appropriate parking facilities for construction workers. Where appropriate, it is expected that movement by sustainable modes of transport will be facilitated and encouraged.

5.2.16 Although not forming part of a Development Plan, the 'Barnstaple with Bideford and Northam Local Cycling and Walking Infrastructure Plan' (January 2024) and the 'Devon and Torbay Local Transport Plan 3 2011-2026' (April 2011) have also been considered with their measures and requirements forming an input to the contents of this ES chapter.

Relevant Guidance

5.2.17 The Planning Practice Guidance (PPG) (Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities and Local Government, 2024) supports the NPPF and provides guidance across a range of topic areas.

5.2.18 Guidance on 'Travel Plans, Transport Assessments and Statements' was published in March 2014 and provides advice on when Travel Plans, Transport Assessments and Transport Statements are required and what they should include. Paragraph 002 states '*Travel Plans, Transport Assessments and Statements are all ways of assessing and mitigating the negative transport impacts of development in order to promote sustainable development*' and are '*required for all developments which generate significant amounts of movements*'.

5.2.19 This ES chapter contains an integrated TA to consider the potential impacts and effects of the construction phase of the Proposed Development on the operation of the highway network, in accordance with relevant parts of the DfT's TAG, guidance and best practice.

5.2.20 Where appropriate, it is expected that movement by sustainable modes of transport will be facilitated and encouraged during the construction phase of the Proposed Development. An Outline CTMP, which includes demand management measures during the construction phase of the Proposed Development such as encouraging car sharing between construction staff, has been prepared.

5.3 Consultation and Engagement

Scoping

5.3.1 In January 2024, the Applicant submitted a Scoping Report to the Planning Inspectorate, which described the scope and methodology for the technical studies being undertaken to provide an assessment of any likely significant effects for the construction phase of the Proposed Development. It also described those topics or sub-topics which are proposed to be scoped out of the EIA process and provided justification as to why the Proposed Development would not have the potential to give rise to significant environmental effects in these areas.

5.3.2 Following consultation with the appropriate statutory bodies, the Planning Inspectorate (on behalf of the Secretary of State) provided a Scoping Opinion on 7 March 2024. The key issues raised during the scoping process specific to traffic and transport are listed in **Table 5.4**, together with details of how these issues have been addressed within the ES.

Table 5.4: Summary of scoping responses

Comment	How and where considered in the ES
Planning Inspectorate	
The Inspectorate notes Section 10.2 of the Scoping Report, which confirms that no separate waste aspect chapter is to be produced but that a Site Waste Management Plan (SWMP) would detail quantities of waste and management as an appendix to the Environmental Statement. Although the Inspectorate is content with this approach, an assessment of effects relating to waste should be provided in the relevant aspect chapters where significant effects are likely to occur, including in relation to transport effects arising from the movement of waste.	The construction traffic number estimates set out in **section 5.10** of this ES chapter include for movement of waste.
Several aspect chapters in the Scoping Report refer to fixed distance study areas with no explanation as to why these have been selected. The Environmental Statement should ensure the study area for each aspect reflects the Proposed Development's Zone of Influence (ZoI) and the impact assessment should be based on the ZoI from the Proposed Development with reference to potential effect pathways. Clear justification should be provided to support any distances applied.	The traffic and transport study area for the assessment of environmental traffic and transport impacts considers the transport network landward of the MLWS where potential impacts are likely to occur. This includes active travel routes and parts of the highway network most likely to be used by construction traffic and staff movements during the construction, operation and maintenance and decommissioning of the Proposed Development, as well as all accesses (whether temporary or permanent) and any highway improvements required to facilitate the construction of the Proposed Development.
In addition to onshore HVDC cable corridor and converter station, if the Alverdiscott Substation Connection Development is part of the Development Consent Order (DCO), this needs to form part of the study area.	The development required at the existing Alverdiscott Substation Site, which is envisaged to include development of a new 400kV substation and other extension modification works, is to be carried out by National Grid Electricity Transmission. This does not form part of the Proposed Development; however, it is considered cumulatively within the EIA as it is necessary to facilitate connection to the National Grid.
Table 7.6.2 of the Scoping Report states that impacts of AILs on the safety of users of the highway network during operation and decommissioning are scoped out of the assessment, although no justification is provided and it is not known whether AILs would be required for the decommissioning stage, for example. Taking into account the nature of the operation and maintenance, the Inspectorate is content that this matter can be scoped out. The Inspectorate is also content that the assessment of the construction phase would represent a worst-case, in the event that AILs are required for decommissioning, and therefore considers a detailed assessment of decommissioning traffic impacts can be scoped out of the Environmental Statement. However, the Environmental Statement should explain the approach taken.	There are no planned AIL movements to be generated during operation and maintenance of the Proposed Development. During decommissioning, any AILs generated would be the same as those generated during construction and would be subject to the same mitigation measures set out in **section 5.8** of this ES chapter. The impacts of AILs on the safety of users of the highway network during operation and maintenance and decommissioning have therefore been scoped out of the assessment.

Comment	How and where considered in the ES
The Scoping Report proposes to scope out impacts of additional vehicle movements on the highway network on: • Driver and pedestrian delay; • Fear and intimidation; • Severance; and • Road safety on the basis that operation and maintenance of the Proposed Development would generate only a limited number of additional vehicle movements on the network. The Inspectorate agrees that due to the likely low numbers of staff to be employed (as described at Paragraph 4.11.4 of the Scoping Report) this matter can be scoped out of the Environmental Statement.	Noted and scoped out of the ES.
The Scoping Report proposes to scope out impacts of additional vehicle movements on the highway network on: • driver and pedestrian delay; • fear and intimidation; • severance; and • road safety on the basis that the decommissioning phase of the Proposed Development would generate a lower number of additional vehicle movements on the highway network than the construction phase. The Scoping Report also states that measures to be included in the CTMP, updated as necessary, would also be employed during the decommissioning phase. Although the Inspectorate is content that the assessment of this matter for the construction phase would represent a worst-case compared to decommissioning, the Inspectorate considers that insufficient evidence has been provided to support the scoping out of additional vehicle movements during decommissioning at this stage. The ES should include an assessment of these matters for decommissioning phase, where likely significant effects could occur, or provide evidence that significant effects would be unlikely to occur.	As set out in **Table 5.8** of this ES chapter, decommissioning of the Proposed Development will generate a lower number of additional vehicle movements on the highway network than the construction phase. This is because retired infrastructure/equipment will either be left in situ or transported away from site in bulk, reducing the number of additional vehicle movements required to facilitate decommissioning of the Proposed Development. In addition, measures to be included in the final version of the CTMP(s), updated as necessary, will also be employed during the decommissioning phase. The potential impact of additional vehicle movements on the highway network and other transport receptors during decommissioning of the Proposed Development based upon future year baseline conditions that could be estimated at this time would therefore be no higher than those impacts during the construction phase. The potential impacts of additional vehicle movements on the highway network during the decommissioning phase of the Proposed Development has therefore been scoped out of the assessment.
The Barnstaple with Bideford and Northam Local Cycling and Walking Infrastructure Plan was recently approved. Consideration of this Plan should be included within the ES.	The contents of the 'Barnstaple with Bideford and Northam Local Cycling and Walking Infrastructure Plan' (January 2024) has been considered throughout this ES chapter.
The ES should explain how the study area for the Traffic and Transport assessment has been defined, with reference to the extent of the likely impacts.	The traffic and transport study area is shown in Volume 2, Figure 5.1 and considers the transport network landward of the MLWS where potential impacts are likely to occur. This includes active

Comment	How and where considered in the ES
The Inspectorate notes that agreement will be sought with the relevant highways authorities regarding any additional parts of the highway network that may require consideration in the traffic and transport assessment. The ES should document any consultation undertaken with regards to the scope of the proposed assessment, including matters agreed/not agreed. Where the scope differs from that requested by the relevant highways authority, the ES should provide justification for the alternative approach.	travel routes and parts of the highway network most likely to be used by construction traffic and staff movements during the construction of the Proposed Development, as well as all accesses (whether temporary or permanent) and any highway improvements required to facilitate the construction of the Proposed Development. The highway links and transport network within the traffic and transport study area set out in this ES chapter have been agreed with DCC through the consultation process.
The Inspectorate advises that collision and casualty data is obtained from www.devon.gov.uk/roads-and-transport/safe-travel/road-safety/collision-data/ as a source of verified collision data from DCC, the relevant highway authority.	The assessment of highway safety presented in this ES chapter uses verified PIA data obtained from DCC to identify clusters of injury accidents and evaluate the highway safety record of the highway links within the traffic and transport study area.
Alverdiscott and Huntshaw Parish Council	
Construction Access (sections 4.6.94-97) also gives some concerns. Whilst all major construction traffic appears to have been accommodated, there remains the question of secondary traffic to the site. There are many very narrow lanes turning off the B3232 between St.John's Chapel and Torrington that can provide access to the site from a southerly direction and any increase in traffic on these lanes brought about by additional delivery vans and any workforce living to the south will cause local residents substantial disruption as they travel towards Bideford. Additionally, any larger vehicles mistakenly using satnav to reach the site from a southerly direction may be tempted to try to get through these lanes causing major disruption as they risk becoming stranded at various choke points. These local lanes, many of which are single track are already seeing the impact of increased traffic from the new estates being built in the Bideford area. We would strongly recommend that restrictive signage be put in place on all access points from the B3232 to prevent any increase in the number of traffic movements; measures similar to that used on the Barnstaple solar panel site may help but are likely to be insufficient.	An Outline CTMP is submitted and a final version of the CTMP(s) will be adopted which will set out suitable construction vehicle routes to be adhered to. The access strategy for the Proposed Development has been designed so construction vehicles do not have to use the narrow lanes between St John's Chapel and Torrington.
Devon County Council	
It is noted that there is little consideration being given to cycling within the proposed assessments. Some specifics are given below, but please ensure that Active Travel England provide comments and those comments are considered.	The potential impact of construction traffic on non-motorised users within the study area has been considered in the assessment set out in **section 5.10**. No comments have been received from Active Travel England through the consultation process.
Paragraph 7.6.2 must include the Barnstaple with Bideford and Northam Local Cycling and Walking Infrastructure Plan which can be found at the following link https://www.devon.cc/bbnlcwip.	The contents of the 'Barnstaple with Bideford and Northam Local Cycling and Walking Infrastructure Plan' (January 2024) has been considered throughout this ES chapter.

Comment	How and where considered in the ES
Paragraph 7.6.6 states that 'Agreement will be sought with the relevant highway authorities regarding any additional parts of the highway network that may need to be considered in the traffic and transport assessment.' This must also extend to the impact on public rights of way and the Tarka Trail, which is a DCC owned route and not a Public Right of Way (PRoW).	Impacts upon PRoW and the Tarka Trail are considered within Volume 2, Chapter 8: Land Use and Recreation of the ES.
Paragraph 7.6.10 states that 'An initial desk-based review has identified a number of data sources which provide baseline data coverage of the traffic and transport study area. These data sources are summarised in Table 7.6.1' and table 7.6.1 goes on to provide a list of data sources one of which www.crashmap.co.uk. We would advise that www.crashmap.co.uk should not be used as it is not verified and we therefore recommend that the verified collision data provided by DCC at the following link https://www.devon.gov.uk/roads-and-transport/safe-travel/roadsafety/collision-data/ should be used instead.	The assessment of highway safety presented in this ES chapter uses verified PIA data obtained from DCC to identify clusters of injury accidents and evaluate the highway safety record of the highway links within the traffic and transport study area.
The traffic and transport assessment needs to consider cyclist delay and as such we would request that paragraph 7.6.39 is amended accordingly to include a bullet point titled cyclist delay.	The potential impact of construction traffic on non-motorised users, including pedestrians and cyclists, within the study area has been considered in the assessment set out in **section 5.10** of this ES chapter. The assessment of pedestrian delay serves as a proxy for the delay of other modes of non-motorised users.
Given that it is likely that most disruption is likely to occur during the construction phase of the development, a Construction and Environmental Management Plan should also accompany the ES detailing the measures being put in place to maintain access, where possible, to any affected routes during construction and detail how the applicant intends to ensure all Public Rights of Way legislation requirements are met should any routes require diversion or temporary closure.	An Onshore Construction and Environmental Management Plan (On-CEMP) has been submitted with the application for development consent. Impacts upon PRoW are considered within Volume 2, Chapter 8: Land Use and Recreation of the ES.
Network Rail	
Network Rail acknowledges the potential for changes in traffic flows which may impact on the number of vehicular and pedestrian movements crossing the railway. These movement may also impact surrounding Level Crossings in the vicinity of the development site. Network Rail's position is that there shouldn't be any increase or change in usage to Level Crossings in the area. Any increase in movement across Level Crossings may increase risk and therefore mitigation methods may be required.	No railway lines will be affected by the Proposed Development.
Network Rail will wish to agree protection for the railway during the course of the construction works, for proposed construction traffic routes and otherwise to protect our undertaking and land interests. Network Rail reserves the right to produce additional and further grounds of concern when	No railway lines will be affected by the Proposed Development.

Comment	How and where considered in the ES
further details of the application and its effect on Network Rail's land available.	
Consideration should be given to ensure that the construction and subsequent maintenance can be carried out without adversely affecting the safety of Network Rail's land. In addition, security of the railway boundary will require to be maintained at all times.	No railway lines will be affected by the Proposed Development.

Preliminary Environmental Information Report

5.3.3 The preliminary findings of the EIA process were published in the Preliminary Environmental Information Report (PEIR) on 16 May 2024. The PEIR was prepared to provide the basis for statutory public consultation under the Planning Act 2008. This included consultation with statutory bodies under section 42 of the Planning Act 2008.

5.3.4 A summary of the key items raised specific to traffic and transport is presented in **Table 5.5** and **Table 5.6,** together with how these issues have been considered in the production of this ES chapter.

Further Engagement

5.3.5 Throughout the EIA process, consultation and engagement (in addition to scoping and section 42 consultation) with interested parties specific to traffic and transport has been undertaken.

5.3.6 A summary of the key items raised specific to traffic and transport is presented in **Table 5.5** and **Table 5.6,** together with how these issues have been considered in the production of this ES chapter.

Table 5.5: Summary of consultation relevant to this chapter

Date	Consultee and type of response	Issues raised	How and where considered in the ES
June 2024	DCC, Section 42 response	It is noted and welcomed that Paragraph 5.14.17 states that 'If an applicant suggests that the costs of meeting any obligations or requirements would make the proposal economically unviable this should not in itself justify the relaxation by the Secretary of State of any obligations or requirements needed to secure the mitigation.' We look forward to the detailed submission and detailed assessment of impacts which will clarify what mitigation is needed for the lengthy and vast construction project, which will see over 100 large vehicles and 400 staff added to the local road network each day.	The relevant potential traffic and transport impacts during the construction phase of the Proposed Development are considered in **section 5.10** of this ES chapter, while mitigation measures are set out in **section 5.8** of this ES chapter. The costs of transport mitigation currently envisaged by the Applicant will not make the Proposed Development economically unviable.
June 2024	DCC, Section 42 response	Paragraph 5.4.23 states that 'The IEMA rule 1 and rule 2 thresholds which delimit the extent of EIA do not on their own apply to the impact upon driver delay as this relates to junction/highway capacity and operation and the impact upon this is defined by the Transport Assessment (TA). Generally, a potential impact upon driver delay may result when the highway network is at or close to capacity and not just with reference to the rule 1 and rule 2 thresholds.' We look forward to receiving details of the scope for the TA through which the impact on driver delay (and other things) will be assessed and after which appropriate mitigation can be agreed.	This ES chapter contains an integrated TA to consider the potential impacts and effects of the Proposed Development on the operation of the highway network, including driver delay, in accordance with relevant parts of the DfT's TAG, guidance and best practice and in accordance with a series of meetings with DCC, as set out within this Table. The relevant potential traffic and transport impacts during the construction phase of the Proposed Development are considered in **section 5.10** of this ES chapter, while mitigation measures are set out in **section 5.8** of this ES chapter.
June 2024	DCC, Section 42 response	Paragraph 5.5.13 states that 'The residential areas of Bideford, Northam, Appledore and Westward Ho! have commensurate walking and cycling infrastructure provision throughout,	The relevant potential traffic and transport impacts during the construction phase of the Proposed Development are considered in **section 5.10** of this ES chapter, while

Date	Consultee and type of response	Issues raised	How and where considered in the ES
		although no footways or cycleways exist in rural areas.' This does not mean that people in the 'rural areas', outside of the 'town proper' do not walk or cycle. The lack of paths means that the impact of additional traffic is likely to be felt more on these country roads where people walk and cycle on the road and will therefore likely result in these users finding it more challenging to use these roads. This too applies to construction staff whereby the lack of non-car infrastructure such as safe walking and cycling routes from the site compound to nearby facilities such as food outlets for lunch, will all potentially negatively impact on the volume of traffic in the area and limit the opportunities for walking and cycling.	mitigation measures are set out in **section 5.8** of this ES chapter. The construction staff would not have time to leave site at lunchtime and travel to nearby facilities such as food and drink outlets for lunch, so catering and welfare facilities will be provided at the main construction compound to the north of Abbotsham Cross roundabout and at the Converter Stations.
June 2024	DCC, Section 42 response	As a result, all road links identified in the PEIR and other emerging documents, need to be assessed for increased conflict and in particular for safety over the many years of proposed construction. Additional conflict between motorised and non-motorised users will not only be a safety issue, but one that may result in people walking/cycling less.	The relevant potential traffic and transport impacts during the construction phase of the Proposed Development are considered in **section 5.10** of this ES chapter, while mitigation measures are set out in **section 5.8** of this ES chapter. This ES chapter contains an integrated TA to consider the potential impacts and effects of the Proposed Development on the operation of the highway network, including road safety, in accordance with relevant parts of the DfT's TAG, guidance and best practice and in accordance with a series of meetings with DCC, as set out within this Table. The assessment presented in this ES chapter considers the impact of the Proposed Development on highway safety, non-

Date	Consultee and type of response	Issues raised	How and where considered in the ES
			motorised user delay and non-motorised user amenity and fear and intimidation.
June 2024	DCC, Section 42 response	Paragraph 5.8.7 states that 'All construction workers will travel to the construction compound at Gammaton Road before onward travel by minibus to other work fronts in the study area using Manteo Way/Barnstaple Street and the A39, then the A386 and the B3236, or further westbound along the A39. The proposed routeing of construction workers is shown in Volume 2, Figure 5.4.' DCC would like to seek clarification of how the impact of 400 construction workers arriving at this location has been assessed. The impact of this additional traffic, likely to be at least 300 vehicles, if not more, will be substantial across a number of routes around Bideford, including but not limited to Alverdiscott Road which would put additional traffic past the main entrance to East-the-Water Primary School.	For the assessment presented in this ES chapter, it is assumed that all construction staff would arrive from outside of the study area. While some construction staff may live within the study area, this approach ensures the maximum number of construction staff vehicle movements are assigned onto each highway link. The assessment has not assigned construction staff vehicle movements along Alverdiscott Road past the main entrance to East-the-Water Primary School and it is considered that the environmental effects on traffic and transport receptors along Alverdiscott Road would be of negligible adverse significance and not significant in EIA terms. All construction staff working at the Converter Site and the onshore HVDC Cable Corridor to the east of the River Torridge would travel to the main construction compound using the A39, Barnstaple Street, Manteo Way and then Gammaton Road. All construction staff working at the onshore HVDC Cable Corridor to the west of the River Torridge would travel to the temporary construction compound using the A39 then the unnamed road to Abbotsham, before onward travel by minibus to other work fronts in the Onshore Infrastructure Area.

Date	Consultee and type of response	Issues raised	How and where considered in the ES
			The relevant potential traffic and transport impacts during the construction phase of the Proposed Development are considered in **section 5.10** of this ES chapter, while mitigation measures are set out in **section 5.8** of this ES chapter.
June 2024	DCC, Section 42 response	No information has been supplied to show how the Gammaton Road construction compound was selected as the best location for staff to access for onward minibus travel and it is uncertain if there are more appropriate and lower impact locations for this initial collection point. For example, and to be read in conjunction with details below, another site may be accessible by public transport and, therefore, the volume of vehicles attracted to the site would be lower, and the impacts on local roads therefore lower. As such, a variety of alternative locations for staff assembly should also be considered and assessed in detail prior to site selection.	All construction staff working at the Converter Site and the onshore HVDC Cable Corridor to the east of the River Torridge would travel to the main construction compound using the A39, Barnstaple Street, Manteo Way and then Gammaton Road. All construction staff working at the onshore HVDC Cable Corridor to the west of the River Torridge would travel to the temporary construction compound using the A39 then the unnamed road to Abbotsham, before onward travel by minibus to other work fronts in the Onshore Infrastructure Area. There are several constraints associated with the narrow roads located within the study area and therefore, the temporary construction compounds along the onshore HVDC Cable Corridor, including the main construction compound along Gammaton Road, would be in areas easily accessible from the A39, A386 and Manteo Way. This would allow construction vehicles to be directed towards the relevant construction compound while reducing movements along minor roads.
June 2024	DCC, Section 42 response	Opportunities should be considered to use the minibuses outside of peak construction traffic time to provide enhanced local public transport	All construction staff working at the onshore HVDC Cable Corridor to the west of the River Torridge would travel to the temporary

Date	Consultee and type of response	Issues raised	How and where considered in the ES
		services as East-the-Water has limited bus services, and none currently serve this proposed site. Additionally, public transport should be provided to this location (or other agreed staff assembly point) to reduce the need for travel by private vehicle.	construction compound using the A39 then the unnamed road to Abbotsham, before onward travel by minibus to other work fronts in the Onshore Infrastructure Area. The minibuses to be used by construction staff for onward travel from the temporary construction compound to the north of Abbotsham Cross roundabout along the A39 to other work fronts in the Onshore Infrastructure Area would not be available for public use. A reasonable estimation is that up to 75% of staff may drive themselves to work with limited access by sustainable modes of travel, with an estimation that 25% of staff will car share. The available public transport adjacent to and within the Onshore Infrastructure Area and the existing walking and cycling infrastructure adjacent to and within the Onshore Infrastructure Area is set out in **section 5.7** of this ES chapter. This shows the sustainable transport options available to construction staff of the Proposed Development. Where appropriate, it is expected that movement by sustainable modes of transport will be facilitated and encouraged during the construction phase of the Proposed Development.

Date	Consultee and type of response	Issues raised	How and where considered in the ES
			An Outline CTMP, which includes demand management measures during the construction phase of the Proposed Development such as encouraging car sharing between construction staff, has been prepared.
June 2024	DCC, Section 42 response	Improvements to walking and cycling facilities should be provided to ensure that staff accessing the compound have a real choice to travel to the site by non-car modes. This would reduce the volume of traffic on local roads and is also an economic/social consideration as otherwise, without travel choices, places a greater emphasis on car ownership as a requirement to work at the site. To this end, and considering the previous comments received from the Planning Inspectorate, the development should consider delivery of measures within the Barnstaple with Bideford and Northam LCWIP.	**Section 5.7** of this ES chapter considers sustainable transport provision. Where appropriate, it is expected that movement by sustainable modes of transport will be facilitated and encouraged during the construction phase of the Proposed Development. An Outline CTMP, which includes demand management measures during the construction phase of the Proposed Development such as encouraging car sharing between construction staff, has been prepared
June 2024	DCC, Section 42 response	We would like to clarify that paragraph 5.8.27, page 45, which relates to the magnitude of impact on the Barnstaple Road/Manteo Way Junction, attributes the following quote to DCC: '*Given this extremely minimal increase as a result of the proposed development, it is clear that the capacity issue at this junction during the peak AM and PM times is as a result of previous developments. It is not the responsibility of the development now proposed to mitigate the issues that have been caused by other developments. Further, the expected increase of 10 two-way traffic movements,*	The quote in paragraph 5.8.27 of the traffic and transport chapter of the PEIR is attributed to the Case Officer of the 1/1141/2022/LA planning application given in the Committee Report (30 March 2023). The quote sets out that 10 additional vehicle movements through the Barnstaple Street / Manteo Way junction in both the AM and PM peak periods as a result of the development proposal subject of the 1/1141/2022/LA planning application would not result in a significant impact and that a financial contribution towards improvements to the Barnstaple Street / Manteo Way junction requested by DCC does

Date	Consultee and type of response	Issues raised	How and where considered in the ES
		compared with a 2022 5-day average of 317 movements in the peak AM and 464 in the peak PM, is not considered to be a significant increase. Accordingly, it is your Officer's view that the requested contribution is not necessary to make the development acceptable in planning terms'.	not meet the requirements of Regulation 122 of The Community Infrastructure Levy Regulations 2010 (as amended) and is therefore not justified.
June 2024	DCC, Section 42 response	An assessment will therefore need to be made of this junction, but it is highly likely that analysis will show that the additional traffic from the construction traffic associated with the Xlinks proposal cannot safely be accommodated within the current capacity of this junction. The Xlinks proposal will, therefore, likely have to upgrade this junction to accommodate 400 daily staff plus over 100 HGVs using it for the long construction period. A roundabout junction would be preferable, however, due to limitations of adjacent land, including this being functional drainage, a traffic signal junction may be acceptable. This would also cater for improved links for people walking and cycling between Manteo Way and the Tarka Trail.	A PICADY assessment of the Barnstaple Street / Manteo Way junction has been undertaken as part of the assessment. The results of the PICADY assessment are set out in **section 5.10** of this ES chapter.
June 2024	DCC, Section 42 response	Further to the above and as suggested in Paragraph 5.8.28 in relation to the Barnstaple Road / Manteo Way Junction, it is not considered possible to limit vehicle movements through this junction to 10 as there would be no absolute control over the arrival and departure of construction staff or materials. Additionally, a new peak time for traffic may be created by bringing in 400 staff. Issues at this junction also relate to safety and the additional substantial traffic volumes will increase conflict and may	The Outline CTMP includes demand management measures to be used during the construction phase of the Proposed Development, including restrictions on operating hours to minimise the number of HGV movements through particular sections of the highway network. The integrated TA within this ES chapter demonstrates that the addition of construction staff movements would not result in a new

Date	Consultee and type of response	Issues raised	How and where considered in the ES
		result in both an increase in collisions and an increase in the severity of collisions. Any traffic count/forecast data used to consider the impacts of the proposal needs to include consented but unbuilt developments in the area.	peak time for traffic being created at the Barnstaple Street / Manteo Way junction. A PICADY assessment of the Barnstaple Street / Manteo Way junction has been undertaken as part of the assessment. PIA data obtained from DCC covering the latest available five-year period indicates that no injury accidents have been recorded at the Barnstaple Street / Manteo Way junction between 01/01/2019 and 31/12/2023, which suggests no highway safety issues in this area of the local highway network. The 2028 future baseline for the assessment has been created by applying relevant traffic growth rates obtained from the DfT National Trip End Model for the respective road types to 2024 base traffic flows with the addition of traffic flows, plus any associated transport infrastructure, generated by committed development, where appropriate.
June 2024	DCC, Section 42 response	DCC is of the view that the proposed temporary traffic signals at the A386/ Littleham Road Junction, detailed in paragraph 5.8.31, should be permanent signals which are removed after the scheme is complete. The Council consider this is justified based on previous experience of the maintenance implications such as battery/ generator replacement and the 24-hour emergency cover required by temporary, often portable traffic signals. With such an arrangement in place for many years, there will be other issues such as the highway being	The traffic signals at the A386 / Littleham Road junction will be permanent and will be removed following the construction of the Proposed Development.

Date	Consultee and type of response	Issues raised	How and where considered in the ES
		unevenly trafficked, and maintenance not being able to occur on this section of road due to the presence of the lights.	
June 2024	DCC, Section 42 response	Paragraph 5.8.100 states that 'It is possible to estimate the impact of increased traffic on road safety from existing personal injury accidents (PIA) records, national statistics and the type and quantity of traffic generated by the Proposed Development.' This is considered a general statement that does not adequately reflect the potential for safety issues to arise from this proposal. Although paragraph 5.13.1 is noted (given the time between preparation of this PEIR chapter and the ES chapter, and to ensure the ES chapter utilises the most up to date data available at that time, new up to date PIA data will be obtained from DCC for analysis of the impact of the construction phase of the Proposed Development on road safety) this short section on road safety bases assessment only on areas that have collisions already, and only at locations where there are clusters of collisions. The previous five years of data include periods of time during which the population were under 'lockdown' and collisions lower. Assessment should be made of the safety of the road network where the largest impacts will arise, regardless of the volume of existing collisions. Other locations should be considered in terms of safety, along the links considered, and elsewhere, such as: • Westleigh Junction A39/B3233; • Alverdiscott Road adjacent to Bideford East-the-Water Primary School;	PIA data has been obtained from DCC covering the latest available five-year period between 01/01/2019 and 31/12/2023 to consider road safety within the study area. The PIA data has been interrogated for all highway links within the study area (which includes the locations identified by DCC) to identify clusters of injury accidents, including Alverdiscott Road adjacent to Bideford East-the-Water Primary School, Abbotsham Cross Roundabout along the A39, Manteo Way and other sections of the A386 through Bideford. As set out in **section 5.10**, the assessment considers that the Proposed Development would have a minor impact of construction traffic on road safety.

Date	Consultee and type of response	Issues raised	How and where considered in the ES
		• Heywood Roundabout A39/A386; • Abbotsham Cross A39/Clovelly Road; • Manteo Way; and • Bideford Quay A386	
June 2024	DCC, Section 42 response	Paragraph 5.8.103 states that 'A review of the CrashMap database has been undertaken to determine key locations within the study area for assessment within this PEIR chapter.' As previously raised within our scoping opinion response, and as also agreed by the Planning Inspectorate, we would advise that www.crashmap.co.uk should not be used as it is not verified and would recommend that the verified collision data provided by Devon County Council at the following link https://www.devon.gov.uk/roads-and-transport/safe-travel/road-safety/collision-data/ should be used instead.	PIA data has been obtained from DCC covering the latest available five-year period between 01/01/2019 and 31/12/2023 to consider road safety within the study area.
June 2024	DCC, Section 42 response	Regarding Table 5.29 Summary of potential environmental effects, we would like to question why all the Highways Links aren't included within this table for assessment purposes. Overall and given the large volume of HGVs and staff construction traffic during the 6-year construction period, we would likely seek a number of s106 contributions to mitigate the impacts that the proposal will have and which will be experienced first-hand by local residents, road users and visitors to the area. Such impacts are likely to include worsening condition of local roads and increased 'potholes' due to the large volume and period of time that the construction traffic will operate and will	The highway links within the study area which do not exceed the respective Rule 1 and Rule 2 thresholds have been screened out of the EIA assessment in accordance with the IEMA guidelines as the environmental effects on traffic and transport receptors along these highway links would be of negligible adverse significance and not significant in EIA terms. The Outline CTMP sets out that a pre-entry condition survey will be undertaken before the start of works and after the substantial completion of works on minor highway links and new junctions used by HGVs to access the Onshore Infrastructure Area. Any damage

Date	Consultee and type of response	Issues raised	How and where considered in the ES
		inevitably require periodic highway maintenance.	to the highway that has been demonstrably caused by construction traffic associated with the Proposed Development will be repaired.
June 2024	DCC, Section 42 response	In support of this, the Highways Authority would include in any agreement the requirement for a before and after condition survey of those roads most likely to be impacted by the construction traffic, with the developer committing to any repairs over that construction period. It is also likely that any s106 agreement would include the requirement for any identified improvements to the local road network such as traffic lights.	The Outline CTMP sets out that a pre-entry condition survey will be undertaken before the start of works and after the substantial completion of works on minor highway links and new junctions used by HGVs to access the Onshore Infrastructure Area. Any damage to the highway that has been demonstrably caused by construction traffic associated with the Proposed Development will be repaired.
June 2024	DCC, Section 42 response	Whilst a Transport Assessment will be required to cover the whole of the local road network, the Highways Authority would ask that Manteo Way/ Barnstaple Street junction be given specific consideration so that we may determine the potential impacts of the proposal and whether any legal agreement would need to include upgrades to this junction.	A PICADY assessment of the Barnstaple Street / Manteo Way junction has been undertaken as part of the assessment. The results of the PICADY assessment are set out in **section 5.10** of this ES chapter.
July 2024	TDC, Section 42 response	Traffic from the construction phase has the potential to have a significant impact on the Bideford area, in particular the Bideford-East and Two Rivers & Three Moors Wards, for up to six years due to large increases in traffic travelling Manteo Way and between the construction compounds and the convertor station site. Figures in the PEIR show up to 80 HGV movements per day, plus up to 532 other vehicles, an increase of 29% and 10% on projected traffic flows for 2027. Clarification is sought as to whether these predictions consider likely increases in traffic from new housing developments expected to be built over this	The traffic and transport study area is shown in Volume 2, Figure 5.1 and considers the transport network landward of the MLWS where potential impacts are likely to occur. This includes active travel routes and parts of the highway network most likely to be used by construction traffic and staff movements during the construction of the Proposed Development, as well as all accesses (whether temporary or permanent) and any highway improvements required to facilitate the construction of the Proposed Development. The highway links and transport network within the traffic and

Date	Consultee and type of response	Issues raised	How and where considered in the ES
		period, also additional HGVs and other traffic from the proposed Bideford Business Park development. The Council also wants to highlight its proposal for a new Operational Services Centre, which would be accessed via Manteo Way / Alverdiscott Road, and the need for the EIA to consider traffic movements from this development in any cumulative assessment.	transport study area set out in this ES chapter have been agreed with DCC through the consultation process. The relevant potential traffic and transport impacts during the construction phase of the Proposed Development are considered in **section 5.10** of this ES chapter. Other developments which emerge at the same time as the construction period of the Proposed Development are treated together and are cumulatively assessed against the baseline scenario to determine their cumulative impact and their cumulative highway and transport mitigation requirements. The cumulative environmental assessment set out in **section 5.11** considers the cumulative effect of new developments expected to be built out over the construction period, including part of the proposed Bideford Business Park development and the Operational Services Centre.
July 2024	TDC, Section 42 response	Northern Devon already has a significant problem with the poor standard of the highway network, particularly a high prevalence of potholes. While Manteo Way has been repaired recently by the Local Highway Authority, the impact of this level of increase of traffic will undoubtedly cause considerable wear and tear to all the roads being used by Xlinks during the extensive construction phase. The movement of very heavy loads, electrical equipment etc., will add a burden to the District's roads which will need to be mitigated for.	The Outline CTMP sets out that a pre-entry condition survey will be undertaken before the start of works and after the substantial completion of works on minor highway links and new junctions used by HGVs to access the Onshore Infrastructure Area. Any damage to the highway that has been demonstrably caused by construction traffic associated with the Proposed Development will be repaired.

Date	Consultee and type of response	Issues raised	How and where considered in the ES
July 2024	TDC, Section 42 response	The PEIR report shows Xlinks construction work will lead to increases of up to 38% in HGV traffic on the A39. Although the cabling work construction period is only estimated to be over a couple of years (compared with five or six for the converter station construction), this still has the potential to give rise to a considerable impact and should be properly assessed and mitigated for through the EIA process. The views and position of the Local Highway Authority (Devon County Council) will be important in this regard, however, as a 'host authority', the Council wishes to be involved in all highway discussions throughout this Pre-Application Stage.	The relevant potential traffic and transport impacts during the construction phase of the Proposed Development are considered in **section 5.10** of this ES chapter, while mitigation measures are set out in **section 5.8** of this ES chapter.
April 2024 to September 2024	Five DCC consultation meetings	During a series of consultation meetings with DCC, the Proposed Development and assessments were discussed which have determined the scope of the TA and this ES chapter and confirmed the access arrangements.	The discussions with DCC have informed the contents of this ES chapter throughout.

Table 5.6: Summary of targeted consultation relevant to this chapter

Date	Consultee and type of response	Issues raised	How and where considered in the ES
October 2024	DCC targeted consultation	Devon County Council requires clarification as to how specific issues that would ordinarily be covered by the licenses, permissions and agreements under the relevant sections of legislation including, the Highways Act 1980, the New Roads & Street Works Act 1991 and	The draft DCO (Document Reference 3.1) includes a requirement to seek approval of the detailed design of highways works from Devon County Council.

Date	Consultee and type of response	Issues raised	How and where considered in the ES
		the Road Traffic Regulation Act 1984 would be addressed. This includes contractor insurance and public liability; bonds; inspection fees; arbitration and disputes; change control; quality assurance; any required Traffic Regulation Orders (TROs) or Temporary TROs (TTROs). The Council cannot make any substantive comment until further details are received.	
October 2024	DCC targeted consultation	The Order, or any other agreement required, should take into account any street furniture not currently in place but which may be installed prior to works commencing, should the Order be made.	The draft DCO (Document Reference 3.1) includes an article to allow the removal and replacement of street furniture.
October 2024	DCC targeted consultation	Devon County Council would like it noted that compensation for any easement rights related to DCC land will need be discussed at a later suitable date albeit this is not a matter for the Examining Authority should the DCO be accepted for examination. It is likely however that the Council will require commuted sums for maintenance purposes for any land that will be transferred to the Council. Should the need to acquire the freehold of DCC land arise, the Council must be immediately notified.	The Applicant is not seeking to acquire the freehold of any Devon County Council land. The Applicant will discuss compensation for any easement rights with Devon County Council directly. Any commuted sums would be agreed within a s278 agreement.
October 2024	DCC targeted consultation	It is noted that there is the possibility for 'frac-outs' to occur in areas where horizontal directional drilling is taking place. Any implications of a 'frac-out' on public highways and transport infrastructure should be considered in the submission.	The Outline Bentonite Breakout Plan included in the Outline On-CEMP (Document Reference 7.7) includes measures to manage frac-out, including notification.
October 2024	DCC targeted consultation	The Devon County Council land affected by the works should be the absolute minimum necessary to deliver the scheme and prior agreement of the working arrangements is	The Applicant confirms that use of Council land has been kept to the absolute necessary minimum to deliver the Proposed Development. Where access is required, prior

Date	Consultee and type of response	Issues raised	How and where considered in the ES
		required, on the basis that any damage resulting from the works shall be made good to the satisfaction of the Council and upon condition that the constructors and operators shall maintain suitable insurance cover and shall indemnify the Council against any damages, claims, costs expenses and liabilities etc. arising from the installation and existence of the equipment on its land.	agreement of working arrangements will be sought, noting that the majority of Council land potentially affected by the Project is within the highway corridor and is associated with AIL movements which will have their own agreement process in line with existing policy and legislative requirements for AIL movements (i.e., engagement with Police, National Highways and Local Highways Authorities). The Applicant anticipates that any requirements for maintenance following use of the relevant highway network will be managed through section 106 or section 278 agreements.
October 2024	DCC targeted consultation	Devon County Council would welcome early and continued engaged from Xlinks to properly understand and assess the likely impacts from a land perspective in addition to the other aspects of the proposal.	The Applicant has continued to engage with Devon County Council**.** It will continue to engage with Devon County Council, including on the matters set out in the Statement of Commonality, which will be prepared post application.

5.4 Study Area

5.4.1 The traffic and transport study area for the assessment of environmental traffic and transport impacts considers the transport network landward of the MLWS where potential impacts are likely to occur. This includes active travel routes and parts of the highway network most likely to be used by construction traffic generated by the Proposed Development, as well as all accesses (whether temporary or permanent) and any highway improvements required to facilitate the construction of the Proposed Development. The highway links which form the study area for the assessment of environmental traffic and transport impacts are shown in Volume 2, Figure 5.1.

5.5 Scope of the Assessment

5.5.1 The scope of this ES has been developed in consultation with relevant statutory and non-statutory consultees as detailed in **Table 5.4** to **Table 5.6**.

5.5.2 The scope of the assessment considers the environmental impact of vehicles associated with the construction phase of the Proposed Development within the traffic and transport study area.

5.5.3 Taking into account the scoping and consultation process, **Table 5.7** summarises the impacts considered as part of this assessment.

Table 5.7: Impacts considered within this assessment

Activity	Potential effects scoped into the assessment
Construction Phase	
Additional vehicle movements or works required to facilitate construction of the Proposed Development	The impact upon driver (including public transport) and non-motorised user delay and fear and intimidation (non-motorised user amenity) for users of the highway network.
	The impact upon severance for users of the highway network.
	The impact upon road safety for users of the highway network and other transport receptors.
	The impact of AILs on the safety and delay of users of the highway network and other transport receptors.

5.5.4 Impacts that are not likely to result in significant effects have been scoped out of the assessment. A summary of the impacts scoped out, together with justification for scoping them out and whether the approach has been agreed with key stakeholders through either scoping or consultation, is presented in **Table 5.8**.

Table 5.8: Issues scoped out of the assessment

Activity	Potential effects scoped out of the assessment
Operation and Maintenance	
Assessment of environmental traffic and transport effects during the operation and maintenance phase of the Proposed Development.	The operation and maintenance phase of the Proposed Development will typically generate a limited number of light vehicle movements onto the highway network for maintenance purposes. The number of vehicle trips will be infrequent and under thresholds for which assessment will be required. Therefore, the potential impact of additional vehicle movements on the highway network and other traffic and transport receptors during the operation and maintenance phase of the Proposed Development is unlikely to result in significant effects and is scoped out of the assessment for traffic and transport.
Decommissioning	
Assessment of environmental traffic and transport effects during the decommissioning phase of the Proposed Development.	The decommissioning phase of the Proposed Development will generate fewer vehicle movements on the highway network than the construction phase. This is because retired equipment and infrastructure will either be left in situ or transported away from site in bulk, therefore reducing the number of additional vehicle movements required to facilitate decommissioning of the Proposed Development. Therefore, the potential impact of additional vehicle movements on the highway network and other traffic and transport receptors during the decommissioning phase of the Proposed Development will be no higher than those impacts during the construction phase and is scoped out of the assessment for traffic and transport.

5.6 Methodology

Relevant Guidance

5.6.1 The primary technical guidance for the assessment of environmental traffic and transport impacts is provided by the 'Environmental Assessment of Traffic and Movement' (Institute for Environmental Management and Assessment (IEMA) 2023) (the 'IEMA guidelines').

5.6.2 The relevant guidance below has also been considered:

- Design Manual for Roads and Bridges (DMRB) LA104: Environmental Assessment and Monitoring (Highways England (now National Highways), Transport Scotland, Welsh Government and Department for Infrastructure Northern Ireland, 2020).
- PPG: Travel Plans, Transport Assessments and Statements (DLHC and MHCLG, 2014).

Methodology for Baseline Studies

Desk Studies

5.6.3 Information on traffic and transport within the study area was collected through a detailed desktop review of existing data sources. The data sources used to inform the baseline assessment primarily comprise published material, which is publicly available, as well as material available to purchase from DCC. These data sources are supplemented by site visits undertaken by competent experts and the analysis of newly commissioned traffic survey data on behalf of the Applicant.

Site-Specific Surveys

5.6.4 In addition to the baseline data sources, site-specific surveys were undertaken by Auto Surveys in 2023 and Advanced Transport Research in 2024 to inform the baseline assessment for traffic and transport. Further information regarding these site-specific surveys is included in Volume 2, Appendix 5.1.

5.6.5 Automatic Traffic Count (ATC) surveys were installed along key highway links within the study area for a consecutive period of seven days by Auto Surveys between Thursday 2 March 2023 and Wednesday 8 March 2023 and by Advanced Transport Research between Tuesday 9 July 2024 and Monday 15 July 2024, to record total traffic volumes, vehicle classifications and vehicle speeds via pneumatic tubes (except for two locations along the A39 where radar surveys were undertaken), where highway authorities do not hold such traffic flow data to inform the baseline assessment for traffic and transport.

5.6.6 A Manual Classified Count (MCC) and queue length survey was undertaken at the Barnstaple Street / Manteo Way priority T-junction between 6am and 8pm on Tuesday 9 July 2024 to record vehicle turning movements through this location of the study area.

Impact Assessment Methodology

Overview

5.6.7 The approach to determining the significance of effects is a two-stage process that involves defining the magnitude of the impact and the sensitivity of the receptor. This section describes the criteria applied in this chapter to assign values to the magnitude of impacts and the sensitivity of the receptors. The terms used to define magnitude and sensitivity are based on relevant guidance, including DMRB methodology (Highways England et al., 2020) where appropriate as described in further detail in Volume 1, Chapter 5: EIA Methodology of the ES.

5.6.8 The assessment presented in this ES chapter has been undertaken in accordance with the IEMA guidelines and with reference to DMRB LA104: Environmental Assessment (Highways England *et al*., 2020) and PPG Travel Plans, Transport Assessments and Statements (DLHC and MHCLG, 2014).

5.6.9 The significance of environmental effects has been measured by considering the interaction between the magnitude of the impacts and the sensitivity of the receptors in the vicinity of transport corridors. The assessment within this ES

chapter considers Proposed Development construction traffic flows against base traffic flows along highway links.

5.6.10 The below has been considered in this chapter, which is consistent with the IEMA guidelines.

- Driver delay (including temporary delays to public transport services);
- Severance;
- Non-motorised user delay;
- Non-motorised user amenity and fear and intimidation;
- Road safety; and
- AILs.

5.6.11 This ES chapter contains an integrated TA to consider the potential impacts and effects of the construction phase of the Proposed Development on the operation of the highway network, in accordance with relevant parts of the DfT's TAG, guidance and best practice.

5.6.12 The assessment of AILs is informed by the Road Vehicles (Construction and Use) Regulations 1986 (as amended) and the Road Vehicles (Authorisation of Special Types) (General) Order 2003. The ability of vehicles to negotiate links and junctions has been considered using the AutoCAD computer programme which models the areas required to allow the passage of vehicles and loads.

5.6.13 The effects of construction traffic upon Noise and Air Quality are considered separately within Volume 2, Chapter 6: Noise and Vibration of the ES and Volume 2, Chapter 7: Air Quality of the ES respectively and are based upon traffic flows derived from this chapter. PRoW are considered within Volume 2, Chapter 8: Land Use and Recreation of the ES.

5.6.14 In terms of the assessment of the environmental traffic and transport impacts, the IEMA guidelines sets out the two rules below to delimit the geographical extent of assessment:

- Rule 1: include highway links where traffic flows will increase by more than 30% (or the number of HGVs will increase by more than 30%); and
- Rule 2: include any other specifically sensitive areas where traffic flows will increase by 10% or more.

5.6.15 The assessment therefore identifies the sensitivity of affected transport routes, taking into account the presence and location of sensitive receptors or route users. The definition of sensitivity in this chapter uses professional judgement and guidance provided in the IEMA guidelines and is described in the following paragraphs.

5.6.16 For Rule 1, any highway link with increases in total traffic flows that exceed 30% or HGVs that exceed 30% are screened into the assessment. For Rule 2, those highway links that were not screened into the assessment under Rule 1 but are deemed to be sensitive and have increases in total traffic flows that exceed 10%, will also be screened into the assessment.

5.6.17 It should be noted that the IEMA guidelines notes that the day-to-day variation of traffic on a road is frequently at least + or – 10% and goes on to set out that changes in traffic flows of less than 10% creates no discernible environmental impact.

5.6.18 The IEMA Rule 1 and Rule 2 thresholds which delimit the extent of EIA do not on their own apply to the impact upon driver delay as this relates to junction/highway capacity and operation and the impact upon this is defined by the TA. Generally, a potential impact upon driver delay may result when the highway network is at or close to capacity and not just with reference to the Rule 1 and Rule 2 thresholds.

5.6.19 The IEMA Rule 1 and Rule 2 thresholds are therefore not applied to this potential impact to delimit the extent of assessment and the extent of assessment is considered across the whole traffic and transport study area, from which key junctions or locations for assessment are identified using observations of existing driver delay, judgement and advice from highway authorities.

5.6.20 The IEMA Rule 1 and Rule 2 thresholds which delimit the extent of EIA also do not on their own apply to the impact upon road safety as this relates to the consideration of road safety along a highway and the impact upon this which is defined by the TA. Generally, a potential impact upon road safety may result at locations where there is an existing road safety issue or where development proposals may create a road safety issue.

5.6.21 The IEMA Rule 1 and Rule 2 thresholds are therefore not applied to this potential impact to delimit the extent of assessment and the extent of assessment is considered across the whole traffic and transport study area, from which key locations for assessment are identified from an analysis of PIAs and advice from highway authorities.

Receptor Sensitivity/Value

5.6.22 The criteria for defining sensitivity in this chapter are outlined in **Table 5.9**.

Table 5.9: Sensitivity criteria

Sensitivity	Definition
Very High	Very high concentration of receptors with greatest sensitivity due to site-specific characteristics which make them particularly sensitive to changes in traffic flow, very high instances of road collisions ('clusters'), urban/residential/built-up roads without commensurate footway provision, very high footfall, severely congested junctions.
High	High concentration of receptors with some sensitivity to changes in traffic flows, high instances of road collisions ('clusters'), urban/residential/built-up roads without commensurate footway provision, high footfall, congested junctions.
Medium	Some concentrations of receptors with some sensitivity to traffic flows, some instances of road collisions ('clusters'), urban/residential/built-up areas with narrow footway provision for its use, demand and footfall or with receptors where there are no setbacks from affected roads and junctions, unsegregated cycleways.
Low	Low concentrations of receptors with some sensitivity to traffic flows including urban/residential/built-up areas with good footway provision commensurate for its use, demand and footfall and other receptors with low sensitivity to traffic flows and those sufficiently distant from affected roads and junctions.
Negligible	Receptors with negligible sensitivity to traffic flows and those sufficiently distant from affected roads and junctions or where no receptors are present.

5.6.23 All highway links within the traffic and transport study area have been assessed against the Rule 1 threshold. Those highway links which have been defined as being of a high or very high sensitivity in accordance with the IEMA guidelines have been additionally assessed against the Rule 2 threshold.

Magnitude of Impact

5.6.24 The criteria for defining magnitude in this chapter are outlined in **Table 5.10** and **Table 5.11**.

Table 5.10: Magnitude of impact criteria

	Negligible	Low	Medium	High
Driver Delay	Defined in conjunction with the TA and a review of the change in operation of a junction or highway link with a particular focus on the weekday peak hour periods when baseline traffic flows are at their highest			
Severance	Change in total traffic flow of less than 30%	Change in total traffic flow of 30% to 60%	Change in total traffic flow of 60% to 90%	Change in total traffic flows of over 90%
Non-Motorised User Delay	Defined from a review of the urban/rural context of a location, site specific local considerations and pedestrian infrastructure, baseline traffic flows and the change in traffic flows			
Non-Motorised User Amenity and Fear and Intimidation	No step changes in the level of fear and intimidation	One step change in the level of fear and intimidation, with <400 vehicle increase in average 18hr vehicle movements and/or <500 HGV increase in total 18hr HGV flow	One step change in the level of fear and intimidation, but with >400 vehicle increase in average 18hr vehicle movements and/or >500 HGV increase in total 18hr HGV flow	Two step changes in the level of fear and intimidation
Road Safety	Defined from a review of PIA data along road links and the predicted changes in traffic flow			
AILs	Defined by an assessment of the suitability of the access routes to accommodate AILs.			

Table 5.11: Definition of terms relating to the magnitude of impact

Magnitude of impact		Definition
High	Adverse	Substantial or total loss of capability for movement along or across transport corridors, loss of access to key facilities and loss of highway safety. Severe delays to travellers.
	Beneficial	Large scale improvement in the capability for movement along and across transport corridors, major improvement in access to key facilities, in highway safety and in delays to travellers.
Medium	Adverse	Loss of capability for movement along or across transport corridors, loss of access to key facilities and loss of highway safety. Delays to travellers.
	Beneficial	Improvement in the capability for movement along and across transport corridors, improvement in access to key facilities, in highway safety and in delays to travellers.
Low	Adverse	Some measurable loss of capability for movement along and across transport corridors, some measurable loss of access to key facilities and some measurable loss of highway safety. Some measurable increase in delays to travellers.
	Beneficial	Some measurable increase in the capability for movement along and across transport corridors, some measurable increase in access to key facilities and some measurable increase in highway safety. Some measurable increase in delays to travellers. Reduced risk of negative impacts occurring.
Negligible	Adverse	Very minor loss of capability for movement along and across transport corridors, very minor loss of access to key facilities and very minor loss of highway safety. Very minor increase in delays to travellers.

Magnitude of impact		Definition
	Beneficial	Very minor increase in capability for movement along and across transport corridors, very minor increase in access to key facilities and very minor increase in highway safety. Very minor decreases in delays to travellers.

Significance of Effect

5.6.25 The significance of the effect upon traffic and transport receptors has been determined by taking into account the sensitivity of the receptor and the magnitude of the impact. The method employed for this assessment is presented in **Table 5.12**. Where a range of significance levels is presented, the final assessment for each effect is based upon expert judgement.

5.6.26 In all cases, the evaluation of receptor sensitivity, impact magnitude and significance of effect has been informed by professional judgement and is underpinned by narrative to explain the conclusions reached.

5.6.27 For the purpose of this assessment, any effects with a significance level of minor or less are not considered to be significant in terms of the EIA Regulations.

Table 5.12: Assessment matrix to determine the significance of the effect

Sensitivity of receptor	Magnitude of impact			
	Negligible	**Low**	**Medium**	**High**
Negligible	Negligible	Negligible or Minor	Negligible or Minor	Minor
Low	Negligible or Minor	Negligible or Minor	Minor	Minor or Moderate
Medium	Negligible or Minor	Minor	Moderate	Moderate or Major
High	Minor	Minor or Moderate	Moderate or Major	Major
Very High	Minor	Moderate or Major	Major	Major

5.6.28 Where the magnitude of impact is 'no change', no effect would arise.

5.6.29 The definitions for significance of effect levels are described below.

- Major: These beneficial or adverse effects are considered to be very important considerations and are likely to be material in the decision-making process. These effects are generally, but not exclusively, associated with sites or features of international, national or regional importance that are likely to suffer a most damaging impact and loss of resource integrity. However, a major change in a site or feature of local importance may also enter this category. Effects upon human receptors may also be attributed this level of significance.
- Moderate: These beneficial or adverse effects have the potential to be important and may influence the key decision-making process. The cumulative effects of such factors may influence decision-making if they lead to an increase in the overall adverse or beneficial effect on a particular resource or receptor.
- Minor: These beneficial or adverse effects are generally, but not exclusively, raised as local factors. They are unlikely to be critical in the decision-making process but are important in enhancing the subsequent design of the project.

- Negligible: No effects or those that are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error.
- No change: No loss or alteration of characteristics, features or elements; no observable impact in either direction.

Assumptions and Limitations of the Assessment

5.6.30 The base and survey data has been obtained from recognised sources and methodologies and is considered representative of current conditions. In this sense, there are few limitations in using this data and any limitations are typical of this project type and size.

5.6.31 At this stage, there are no procurements in place and the origins of materials cannot be confirmed. The procurement of material affects the movement of construction HGVs, which in turn affects the number of construction HGVs along each highway link. It is possible that the origin of materials will change as the construction phase progresses as there is only a finite amount of material from each source. For example, an amount of material is sourced from one location, but when this amount is reached, material is then sourced from another location. This will change the movement of HGVs as the construction phase progresses and result in day-to-day variances. An allowance for this has been built into the assessment.

5.7 Baseline Environment

5.7.1 This section of the chapter defines the baseline environment of the study area based upon site-specific surveys and the baseline data sources set out in **Table 5.12**.

Desk Study

5.7.2 Information on traffic and transport within the study area was collected through a detailed review of existing studies and datasets. These are summarised in **Table 5.13**.

Table 5.13: Summary of desk study sources used

Title	Source	Year
Existing traffic data identifying the current operation of the highway network within the study area	DfT	2023
Details of sensitive receptors within the study area, including active travel routes, schools and built-up/populated areas	Google Maps (www.google.co.uk/maps) DCC TDC	2024
PIA data for recorded injury accidents within the study area	DCC	2019 to 2023
Details of current bus and rail services within the study area	Relevant service operators	2024
Existing PRoW and active travel routes within the study area	DCC	2024

Title	Source	Year
	Google Maps (www.google.co.uk/maps)	
Details of current NCN routes and other cycle routes within the study area	DCC Sustrans (www.sustrans.org.uk/national-cycle-network)	2024
Records of the adopted highway boundary	DCC	2024

Highway Network

5.7.3 The study area is characterised by the A39 forming part of the principal road network. The A39 routes broadly north east to south west between Barnstaple (and beyond) and Fairy Cross (and beyond) respectively and will form a key access route for construction vehicles travelling to and from the Onshore Infrastructure Area.

5.7.4 To the south east of Barnstaple, the A361 connects with the A39 that bypasses the south of Barnstaple and continues to the west towards Bideford. This section of the A39 is single carriageway and subject to the national speed limit. The A39 passes the B3232 that forms a roundabout junction at Roundswell.

5.7.5 The B3232 runs north to south. To the south, the B3232 continues to Alverdiscott village, approximately 1.6 km to the east of the Alverdiscott Substation site and Converter Site via St Johns Chapel and Newton Tracey. At Alverdiscott, the B3232 forms a junction with a local lane adjacent to the church. This lane travels west towards Webbery via Stony Cross to Alverdiscott Lane, from which the Alverdiscott Substation site is accessible.

5.7.6 The A39 continues to the west to pass over the River Torridge to the north of Bideford. To the east of the bridge over the River Torridge, the A39 forms a priority junction with a short section of road that connects to a roundabout approximately 400 m to the north. The A39 is subject to a 40 mph speed limit in the vicinity of this junction.

5.7.7 The roundabout provides access to the B3233 that runs towards Instow and Yelland to the north and Bideford to the south. To the north of Bideford, the B3233 provides access to Manteo Way, which in turn provides access to Gammaton Road, Tennacott Lane, Gammaton Moor and Alverdiscott Road.

5.7.8 To the west of the bridge over the River Torridge, the A39 forms a roundabout junction with the A386. This provides access to Northam, Westward Ho! and Appledore to the north and Bideford to the south where the A386 continues adjacent to the River Torridge as single carriageway towards small villages such as Landcross.

5.7.9 The A39 then continues to the south west and forms a signalised junction with the B3236 Buckleigh Road that provides access to Abbotsham, Buckleigh and Westward Ho!. Continuing south west, the A39 forms a roundabout junction at Abbotsham Cross with Clovelly Road that provides access to Handy Cross and Littleham via Littleham Road and with Abbotsham Road that provides access to Abbotsham. The A39 then continues to the south west towards Bude via Fairy Cross.

5.7.10 The highway network within the study area as described in the paragraphs above has been determined as being those highway links which are likely to be used by construction traffic and staff movements during the construction of the Proposed Development, as shown in Volume 2, Figure 5.1.

Public Transport Services

5.7.11 Details of the bus services available adjacent to and within the Onshore Infrastructure Area are provided in **Table 5.13**. These services are shown in Volume 2, Figure 5.2.

Table 5.14: Summary of local bus services

Service	Operator	Route	Frequency (Monday to Friday)	Frequency (Saturday)	First service	Last service
5B	Stagecoach South West	Barnstaple – Great Torrington via Bideford	7 per day	7 per day	05:20	22:45
14	Stagecoach South West	Bideford – East-the-Water	3 per day on Tuesday and Thursday		09:55	14:43
15	Stagecoach South West	Barnstaple / East-the-Water –Affinity Devon Outlet	Hourly	Hourly	06:01	18:26
15A	Stagecoach South West	East-the-Water – Affinity Devon Outlet via Bideford	Hourly	Hourly	07:07	17:54
16	Stagecoach South West	Bideford – Westward Ho! – Appledore	3 per day on Tuesday and Thursday		09:11	13:50
21	Stagecoach South West	Illfracombe / Barnstaple – Westward Ho! via Bideford	Every 30 minutes	Every 30 minutes	05:30	22:15
21A	Stagecoach South West	Illfracombe / Barnstaple – Appledore via Bideford	Every 30 minutes	Every 30 minutes	06:00	22:35
75	Stagecoach South West	Bideford – Great Torrington	Hourly	Hourly	06:59	18:00
85	Stagecoach South West	Barnstaple - Holsworthy	4 per day	4 per day	08:35	16:50
317	Stagecoach South West	Bideford - Okehampton	5 per day	5 per day	05:47	17:40
319	Stagecoach South West	Barnstaple - Hartland via Bideford	6 per day	6 per day	06:03	17:20
322	Taw & Torridge	Ashreigny – Barnstaple via Bideford	Wednesday 09:25 (Return 13:40)			
372	Stagecoach South West	Bideford - Holsworthy	3 per day on Monday and Friday, and 1 service per day Tuesday – Thursday		08:55	13:35

Service	Operator	Route	Frequency (Monday to Friday)	Frequency (Saturday)	First service	Last service
386	Taw & Torridge	Petrockstowe – Barnstaple via Bideford	Friday 09:45 (Return 13:00)			
641	Stagecoach South West	Bideford – Holsworthy	Wednesday 09:05 (Return 13:30)			
642	MD Buses	Northlew – Bideford	Monday 09:15 (Return 13:30)			
646	MD Buses	Halwill Junction – Barnstaple via Bideford	Tuesday 09:05 (Return 13:30)			

5.7.12 Details of the rail services available at Barnstaple railway station are provided in **Table 5.15**. The location of Barnstaple railway station is shown in Volume 2, Figure 5.2.

Table 5.15: Summary of rail services

Destination	Weekday			Saturday		
	First service	Last service	Typical frequency	First service	Last service	Typical frequency
Exeter Central	06:25	20:41	Hourly	06:31	19:42	Hourly
Axminster via Exeter St David's	1 service at 16:31			No Saturday Service		
Exmouth	1 service at 18:38			No Saturday Service		
Paignton via Torquay	1 service at 19:42			No Saturday Service		

Walking and Cycling

5.7.13 The Onshore Infrastructure Area is located within areas of Devon which consist predominately of agricultural land where the walking and cycling infrastructure provision is poor.

5.7.14 The residential areas of Bideford, Northam, Appledore and Westward Ho! have commensurate walking and cycling infrastructure provision throughout, although no footways or cycleways exist in rural areas.

5.7.15 Route 3 of the NCN is a long-distance route between Bristol and Land's End and runs through the study area adjacent to the B3233.

5.7.16 The location of walking and cycling infrastructure within the study area, including PRoW and NCN routes, as well as footway provision and on-road and off-road cycle routes, is shown in Volume 2, Figure 5.3.

Base Traffic Flows

5.7.17 For the purposes of this ES chapter, base traffic flows for the traffic and transport study area have been obtained from the publicly available sources set out in **Table 5.13** and from undertaking site-specific surveys in the locations

shown in Volume 2, Figure 5.8. The data obtained from the site-specific surveys is included in Volume 2, Appendix 5.1.

5.7.18 For traffic flow data recorded by site-specific surveys undertaken in 2023 and where DfT data has been used, traffic growth rates to 2024 were obtained from the DfT National Trip End Model for the respective road types and then applied to the data. For those site-specific surveys undertaken in 2024, growth rates were not required where this data was used. The 2024 base traffic flows along the highway links within the study area are set out in **Table 5.16**.

5.7.19 The base traffic flows include total vehicles (all classifications of vehicles) and HGVs, which comprise all vehicles more than 7.5 tonnes gross weight (including buses) for all highway links within the study area.

5.7.20 The DfT traffic flows and those obtained from the site-specific surveys have been discussed with DCC and used to inform the potential environmental impacts and effects of the Proposed Development on traffic and transport receptors.

Table 5.16: 2024 base traffic flows

Highway link reference	Description	2024 AADT flows		Source
		Total vehicles	HGVs	
Link 1	A39 between Lake Roundabout and Roundswell Roundabout	31,454	948	DfT
Link 2	A39 between Roundswell Roundabout and B3233	19,959	706	DfT
Link 3	A39 between B3233 and Heywood Road Roundabout	23,381	805	DfT
Link 4	A39 between Heywood Road Roundabout and B3236 Buckleigh Road	15,176	488	Site-Specific Survey
Link 5	A39 between B3236 Buckleigh Road and Abbotsham Cross Roundabout	13,286	400	Site-Specific Survey
Link 6	A39 between Abbotsham Cross Roundabout and Fairy Cross	7,299	229	DfT
Link 7	B3233 Barnstaple Street between Barnstaple Street Roundabout and Manteo Way	11,777	470	Site-Specific Survey
Link 8	Manteo Way between Barnstaple Street and Gammaton Road	8,296	285	Site-Specific Survey
Link 9	Gammaton Road between Manteo Way and Tennacott Lane	802	10	Site-Specific Survey
Link 10	Gammaton Road between Tennacott Lane and Moorview House	802	10	Site-Specific Survey
Link 11	Gammaton Moor Road between Moorview House and Alverdiscott Substation access	88	5	Site-Specific Survey
Link 12	A386 between Heywood Road Roundabout and The Quay	4,444	64	DfT
Link 13	A386 between Heywood Road Roundabout and Ford Rise	13,581	459	Site-Specific Survey
Link 14	A386 between Ford Rise and Wesleyan Chapel	9,497	313	Site-Specific Survey
Link 15	B3236 Buckleigh Road between A39 and Pusehill Road	1,925	20	Site-Specific Survey
Link 16	Bowood Farm Road between Abbotsham Cross Roundabout and Temporary Construction Compound Access 2	1,577	35	Site-Specific Survey
Link 17	Littleham Road between Abbotsham Cross Roundabout and Temporary Construction Compound Access 3	1,804	107	Site-Specific Survey

Road Safety

5.7.21 PIA data has been obtained from DCC covering the latest available five-year period between 1 January 2019 and 31 December 2023 to consider road safety within the study area.

5.7.22 The PIA data has been interrogated for all highway links within the study area to identify clusters of injury accidents, which DCC consider to be a site with five or more injury accidents within a 50 m radius over a five-year period. These clusters of injury accidents are set out in **Table 5.17**. Further information regarding this PIA data is included in Volume 2, Appendix 5.2.

Table 5.17: PIA clusters within the study area

Cluster ID	Location	Number of recorded injury accidents
1	A386 / Old Bideford Bridge / Bridge Street mini roundabout junction	6
2	A39 along Torridge Bridge	5
3	A386 through Bideford adjacent to Jubilee Square	5
4	A39 / B3233 junction	5
5	A39 Heywood Roundabout junction	6

5.7.23 Further analysis of these five clusters of injury accidents has been undertaken to determine the cause of each of the injury accidents within the clusters and if there were any consistent contributory factors.

5.7.24 PIA cluster 1 occurred at the A386 / Old Bideford Bridge / Bridge Street mini roundabout junction in Bideford where six injury accidents were recorded, of which all six injury accidents were slight in nature. One PIA involved a car swerving into the path of an oncoming car along Old Bideford Bridge. Two PIAs involved a cyclist travelling along Old Bideford Bridge being hit by a car when both entered the mini roundabout junction at the same time. Three PIAs involved a pedestrian being hit by a car along the A386 either side of the mini roundabout junction after stepping out in front of stationary and slow-moving traffic.

5.7.25 PIA cluster 2 occurred along the A39 over the Torridge Bridge where five injury accidents were recorded, of which five were slight in nature and one was serious in nature. One PIA involved a cyclist falling over when trying to avoid debris on the carriageway. Three PIAs involved cars colliding with the rear of stationary cars in slow moving traffic. One PIA, which was serious in nature, involved a cyclist clipping the rear of another cyclist ahead then losing control and falling over when travelling westbound over the Torridge Bridge.

5.7.26 PIA cluster 3 occurred along the A386 through Bideford adjacent to Jubilee Square where five injury accidents were recorded, of which all six injury accidents were slight in nature. One PIA involved a pedestrian being hit by a car after stepping out into the carriageway when the car overtook a stationary bus. One PIA involved a car clipping a stationary taxi waiting in the taxi rank after swerving to avoid a pedestrian using the pedestrian crossing. One PIA involved a cyclist falling over after braking sharply to avoid a taxi which had pulled out of the taxi rank in front of another car. One PIA involved a motorcyclist being hit by

a car and falling to the ground when turning right from Jubilee Square onto the A386 after the car overtook a stationary HGV waiting at the pedestrian crossing with a red signal. One PIA involved a motorcyclist hitting the back of a stationary car and falling onto the ground as the car was waiting for a bus to pull out of a bus stop.

5.7.27 PIA cluster 4 occurred at the A39 / B3233 junction where five injury accidents were recorded, of which four were slight in nature and one was serious in nature. One PIA involved a car hitting the back of another car as both prepared to slow down for the amber signal at the junction. One PIA involved a car travelling westbound along the A39 hitting the left side of another car waiting at the junction to turn right onto the B3233. One PIA involved a car travelling eastbound along the A39 hitting another car turning right onto the B3233. One PIA involved a car hitting the back of another car waiting to turn left onto the B3233 from the left slip road from the A39. One PIA, which was serious in nature, involved several vehicles when a car travelling westbound along the A39 hit the back of another car in a stationary queue of traffic when roadworks and lane closures were in place at the junction.

5.7.28 PIA cluster 5 occurred at Heywood Roundabout along the A39 where six injury accidents were recorded, of which four were slight in nature and two were serious in nature. One PIA involved a car travelling westbound along the A39 hitting a car travelling eastbound from Heywood Roundabout after the car travelling westbound drifted into the oncoming traffic lane. One PIA involved a car hitting a cyclist when both were travelling around Heywood Roundabout. Two PIAs involved a car hitting the back of a stationary car waiting to enter Heywood Roundabout along the A39. One PIA, which was serious in nature, involved a motorcyclist falling onto the ground after being hit by a car on the approach to Heywood Roundabout. One PIA, which was serious in nature, involved a pedestrian being hit by a car in the outside lane on the approach to Heywood Roundabout after crossing the inside lane in front of stationary traffic.

5.7.29 Alongside these five clusters of injury accidents, analysis has also been undertaken of recorded injury accidents in other locations requested by DCC as part of the section 42 consultation to the PEIR, including Alverdiscott Road adjacent to Bideford East-the-Water Primary School, Abbotsham Cross Roundabout along the A39, Manteo Way and other sections of the A386 through Bideford. No clusters of injury accidents occurred in these other locations, with no more than five injury accidents recorded within a 50m radius during the most recent five-year period.

5.7.30 One injury accident was recorded along Alverdiscott Road adjacent to Bideford East-the-Water Primary School during the most recent five-year period. This injury accident was slight in nature and involved a car hitting the side of another car then a brick wall.

5.7.31 One injury accident was recorded at Abbotsham Cross Roundabout during the most recent five-year period. This injury accident was slight in nature and involved a car hitting a cyclist on the approach to Abbotsham Cross Roundabout.

5.7.32 Two injury accidents were recorded along Manteo Way during the most recent five-year period, of which both were slight in nature. One injury accident involved a van travelling northbound along Manteo Way hitting an oncoming car after overtaking another car. One injury accident involved a car turning right onto Gammaton Road hitting another car travelling westbound along Manteo Way.

5.7.33 Three injury accidents were recorded along the A386 through Bideford in proximity to the junction with High Street, of which all were slight in nature. One injury accident involved a car travelling northbound along the A386 hitting the back of another car in stationary traffic. One injury accident involved a car travelling southbound hitting another car which was turning right onto High Street. One injury accident involved a car travelling southbound along the A386 and turning right onto High Street hitting a cyclist travelling northbound along the A386.

5.7.34 Two injury accidents were recorded at the A386 / Torridge Hill junction. One injury accident, which was slight in nature, involved a van travelling along Torridge Hill hitting a car travelling northbound along the A386 at the roundabout junction. One injury accident, which was serious in nature, involved a car travelling southbound along the A386 hitting a stationary car at the roundabout junction.

5.7.35 Three injury accidents were recorded along the A386 between Lower Meddon Street and Torridge Hill, of which all were slight in nature. One injury accident involved a car hitting another car along the A386. One injury accident involved a car hitting another car turning onto the A386 from the Police Station. One injury accident involved a car hitting the back of another car along the A386 waiting to turn right onto Lower Meddon Street.

5.7.36 An analysis of PIA data obtained from DCC covering the latest available five-year period between 1 January 2019 and 31 December 2023 demonstrates no consistent contributory factors to injury accidents within the study area.

Future Baseline Conditions

5.7.37 Schedule 4, paragraph 3 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 require that '*an outline of the likely evolution thereof without implementation of the development as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge'* is included within the ES. This section provides an outline of the likely future baseline conditions in the absence of the Proposed Development.

5.7.38 A 2028 future baseline scenario for the traffic and transport study area has been created to reflect the anticipated peak year of the Proposed Development construction programme and to therefore assess the potential environmental impacts of the Proposed Development on traffic and transport receptors.

5.7.39 The 2028 future baseline has been discussed with DCC and created by applying relevant traffic growth rates obtained from the DfT National Trip End Model for the respective road types to the 2024 base traffic flows set out in **Table 5.16** with the addition of traffic flows, plus any associated transport infrastructure, generated by committed development, where appropriate.

5.7.40 A committed development is a scheme which has planning permission but is yet to generate any traffic flows because for example, the development has yet to be built out, but is expected to generate traffic flows onto the highway network during the construction of the Proposed Development.

5.7.41 A TA methodology has been used to treat committed development and the traffic flows generated by this committed development. The TA considers sustainability, the capacity of the highway network and the impact of development upon the transport network. Those developments which have

planning permission have already been through that process and have identified any highway and transport improvements / interventions that may be necessary to mitigate their impact. There is no further opportunity for these developments to provide additional highway or transport mitigation and so these developments and their highway and transport schemes are treated as committed within any future year scenarios.

5.7.42 For this reason, the traffic flows and transport mitigation schemes of developments which have planning permission form part of a future transport baseline scenario for any other developments which follow. In doing that, the impact of a development proposal which follows committed development can be determined in the knowledge of what already has planning permission in transport and highways terms along with the need for any additional highway and transport improvements that may be necessary.

5.7.43 Other developments which emerge at the same time are treated together and are cumulatively assessed against the baseline scenario described above to determine their cumulative impact and their cumulative highway and transport mitigation requirements.

5.7.44 The TA is undertaken in this way so that the transport impacts on highway capacity and the transport network is correctly judged and correct conclusions are drawn. This ES chapter adopts this same approach in terms of committed development and cumulative development as part of the integrated TA.

5.7.45 Using the Cumulative Effects Assessment (CEA) long list, those projects that have planning permission are firstly identified to establish those that are all committed development. A filtering process is then undertaken to establish the level of traffic that each committed development would generate within the traffic and transport study area such that those which would generate negligible levels are discounted from the process and those which would generate an amount higher than negligible are retained.

5.7.46 The traffic growth rates obtained from the DfT National Trip End Model include for organic changes in background traffic flows and for changes to traffic flows as a result of new development. The application of traffic growth rates therefore makes an allowance for new traffic flows onto the highway network from committed development, such as those allocated within adopted local plans. The committed development discounted from the above process is therefore not disregarded entirely because the traffic flows which these sites would generate are included as part of the growth rates applied to the base traffic flows.

5.7.47 A filtering process was undertaken to determine the committed development to be retained. Once that process was complete, the traffic flows generated by the committed development retained was added to the base traffic flows to create future baseline traffic flows. For those not retained, their traffic flows that would be generated form part of the growth rates and are therefore included within the future baseline traffic flows accordingly.

5.7.48 Upon identifying committed development, those which are significantly outside of the study area where their traffic flows would disperse across the highway network and would be negligible within the study area, as well as those which do not have a temporal overlap with the Proposed Development, were discounted.

5.7.49 All planning applications of the remaining committed development were then interrogated to determine their traffic generation onto the highway network within the study area. The committed development was only retained if a form of

TA or traffic and transport chapter of an ES was submitted in support of its planning application.

5.7.50 The TA or ES of the remaining committed development was then interrogated to establish estimations of vehicle movements within the study area and professional judgement was used to determine whether these traffic flows are higher than negligible and whether the development should be retained as a committed development. Those remaining are then confirmed as committed development and these are set out in **Table 5.18** below.

Table 5.18: Committed developments

Planning application reference	Status	Distance from Onshore Infrastructure Area (KM)	Description of development
Torridge District Council 1/0926/2020/OUTM	Permitted	0.80	Outline planning application for the erection of up to 290 dwellings, including affordable housing with public open space, landscaping and sustainable drainage system (SuDS) and two vehicular access points from Abbotsham Road. All matters reserved except access.
North Devon Council 73086	Permitted	6.50	Hybrid planning application for mix of B1, B2 and B8 uses and full planning for new access road, site levels, structural landscaping and park and change facility at land off B3232 and A39 at Roundswell.

5.7.51 As outlined above, the application of traffic growth rates from the DfT National Trip End Model makes an allowance for traffic generation from committed development allocated within adopted local plans.

5.7.52 All committed development set out in the CEA longlist allocated within the 'North Devon and Torridge Local Plan 2011-2031' which would generate traffic flows onto the highway network in the 2028 future baseline scenario are therefore considered in the application of traffic growth rates from the DfT National Trip End Model.

5.7.53 For reference, the committed development sites allocated within the 'North Devon and Torridge Local Plan 2011-2031' which would generate traffic flows onto the highway network in the 2028 future baseline scenario are set out in **Table 5.19** below.

Table 5.19: Allocated sites in the North Devon and Torridge Local Plan 2011-2031

Policy Number	Development description
BID01	Bideford West Urban Extension
BID02	Cleave Wood
BID05	Land adjoining Caddsdown Business Park
NOR01	Daddon Hill Farm
NOR02	Site West of Buckleigh Road
NOR04	Tadworthy Road (Northam)
FRE01	Fremington Army Camp
BAR02	Larkbear Strategic Extension

Policy Number	Development description
BAR04	Mount Sandford Green

5.7.54 The evolution of the 2024 base traffic flows to the 2028 future baseline scenario following the filtering process of the CEA long list to determine committed development is set out in **Table 5.18**.

Table 5.20: 2028 future baseline traffic flows

Highway link reference	Description	2028 AADT flows		Source
		Total vehicles	HGVs	
Link 1	A39 between Lake Roundabout and Roundswell Roundabout	33,805	1,031	DfT
Link 2	A39 between Roundswell Roundabout and B3233	21,377	760	DfT
Link 3	A39 between B3233 and Heywood Road Roundabout	25,001	861	DfT
Link 4	A39 between Heywood Road Roundabout and B3236 Buckleigh Road	16,229	521	Site-Specific Survey
Link 5	A39 between B3236 Buckleigh Road and Abbotsham Cross Roundabout	14,782	427	Site-Specific Survey
Link 6	A39 between Abbotsham Cross Roundabout and Fairy Cross	7,725	243	DfT
Link 7	B3233 Barnstaple Street between Barnstaple Street Roundabout and Manteo Way	12,180	487	Site-Specific Survey
Link 8	Manteo Way between Barnstaple Street and Gammaton Road	8,616	295	Site-Specific Survey
Link 9	Gammaton Road between Manteo Way and Tennacott Lane	833	10	Site-Specific Survey
Link 10	Gammaton Road between Tennacott Lane and Moorview House	833	10	Site-Specific Survey
Link 11	Gammaton Moor Road between Moorview House and Alverdiscott Substation access	91	5	Site-Specific Survey
Link 12	A386 between Heywood Road Roundabout and The Quay	4,656	67	DfT
Link 13	A386 between Heywood Road Roundabout and Ford Rise	14,231	481	Site-Specific Survey
Link 14	A386 between Ford Rise and Wesleyan Chapel	9,850	324	Site-Specific Survey
Link 15	B3236 Buckleigh Road between A39 and Pusehill Road	2,015	21	Site-Specific Survey
Link 16	Bowood Farm Road between Abbotsham Cross Roundabout and Temporary Construction Compound Access 2	1,634	36	Site-Specific Survey
Link 17	Littleham Road between Abbotsham Cross Roundabout and Temporary Construction Compound Access 3	1,869	110	Site-Specific Survey

Key Receptors

5.7.55 The sensitivity of each highway link in the traffic and transport study area set out in Volume 2, Figure 5.1 has been identified using the criteria set out in **Table 5.9** using professional judgement. **Table 5.21** identifies the receptors taken forward into the assessment.

Table 5.21: Key receptors taken forward to assessment

Receptor	Description	Sensitivity/Value
Link 1: A39 between Lake Roundabout and Roundswell Roundabout	A small area of residential development to the north of the highway link adjacent to Roundswell Roundabout, although set back with adequate screening. A small section of footway both sides of the carriageway with an uncontrolled crossing point at Roundswell Roundabout.	Low
Link 2: A39 between Roundswell Roundabout and B3233	A small area of residential development and some employment to the north of the highway link just to the west of the Roundswell Roundabout, although set back with adequate screening.	Low
Link 3: A39 between B3233 and Heywood Road Roundabout	Some small areas of residential development to the north and south of the highway link to the west of Torridge Bridge, although set back with adequate screening. A small section of shared footway/cycleway both sides of the carriageway with an uncontrolled crossing point at Heywood Road Roundabout.	Low
Link 4: A39 between Heywood Road Roundabout and B3236 Buckleigh Road	No sensitive receptors.	Negligible
Link 5: A39 between B3236 Buckleigh Road and Abbotsham Cross Roundabout	An outdoor adventure site and brewery to the north and a hotel to the south of the highway link, although set back with adequate screening.	Low
Link 6: A39 between Abbotsham Cross Roundabout and Fairy Cross	A small group of dwellings fronting the carriageway in Fairy Cross. A wide footway adjacent to the carriageway with a 60mph speed limit, plus a bus stop either side. Other residential development to the south of the carriageway set back with adequate screening.	Low
Link 7: B3233 Barnstaple Street between Barnstaple Street Roundabout and Manteo Way	A small group of dwellings to the east of the highway link, although set back with adequate screening.	Low
Link 8: Manteo Way between Barnstaple Street and Gammaton Road	Some concentrations of both residential and employment areas either side of the highway link. A wide footway and shared footway/cycleway adjacent to the carriageway which has a 30 mph speed limit, plus adequate crossing facilities. The Barnstaple Street / Manteo Way T-junction operates close to capacity.	High
Link 9: Gammaton Road between Manteo	No sensitive receptors.	Negligible

Receptor	Description	Sensitivity/Value
Way and Tennacott Lane		
Link 10: Gammaton Road between Tennacott Lane and Moorview House	Some isolated residential properties both adjacent to and set back from the carriageway.	Negligible
Link 11: Gammaton Moor Road between Moorview House and Alverdiscott Substation access	Some isolated residential properties both adjacent to and set back from the carriageway.	Negligible
Link 12: A386 between Heywood Road Roundabout and The Quay	Some concentrations of residential areas either side of the highway link, as well as a place of worship, a leisure centre, a primary school and a care home, with adequate footway both sides of the carriageway, which has a 30 mph speed limit.	Medium
Link 13: A386 between Heywood Road Roundabout and Ford Rise	Some concentrations of residential areas either side of the highway link, as well as a care home, recreational area (skate park), a place of worship and a library, with adequate footway both sides of the carriageway, which has a 30mph speed limit. Also includes a tourist area along The Quay in Bideford and concentrations of PIAs recorded at the A386/Bridge Street/Old Bideford Bridge junction.	High
Link 14: A386 between Ford Rise and Wesleyan Chapel	Some isolated residential properties set back from the carriageway.	Negligible
Link 15: B3236 Buckleigh Road between A39 and Pusehill Road	A care home to the south of the highway link, although set back with adequate screening.	Low
Link 16: Bowood Farm Road between Abbotsham Cross Roundabout and Temporary Construction Compound Access 2	No sensitive receptors.	Negligible
Link 17: Littleham Road between Abbotsham Cross Roundabout and Temporary Construction Compound Access 3	No sensitive receptors.	Negligible

5.8 Mitigation Measures Adopted as Part of the Proposed Development

5.8.1 For the purposes of the EIA process, the term *'measures adopted as part of the Proposed Development'* is used to include the following types of mitigation measures (adapted from IEMA, 2016). These measures are set out in Volume 1, Appendix 3.1: Commitment Register of the ES.

- Embedded mitigation. This includes the below.
  - Primary (inherent) mitigation - measures included as part of the Proposed Development design. IEMA describes these as '*modifications to the location or design of the development made during the pre-application phase that are an inherent part of the project and do not require additional action to be taken'*. This includes modifications arising through the iterative design process. These measures will be secured through the consent itself through the description of the project and the parameters secured in the DCO and/or marine licences. For example, a reduction in footprint or height.
  - Tertiary (inexorable) mitigation. IEMA describes these as '*actions that would occur with or without input from the EIA feeding into the design process. These include actions that will be undertaken to meet other existing legislative requirements, or actions that are considered to be standard practices used to manage commonly occurring environmental effects*'. It may be helpful to secure such measures through a Construction Environmental Management Plan or similar, such as a CTMP.
- Secondary (foreseeable) mitigation. IEMA describes these as '*actions that will require further activity in order to achieve the anticipated outcome'*. These include measures required to reduce the significance of environmental effects (such as lighting limits) and may be secured through environmental management plan.

5.8.2 In addition, where relevant, measures have been identified that may result in enhancement of environmental conditions. Such measures are clearly identified within Volume 1, Appendix 3.1: Commitment Register of the ES. The measures relevant to this chapter are summarised in **Table 5.22** and indicative measures included in the Outline CTMP are set out in **Table 5.23** (these will be developed through ongoing discussions with DCC).

5.8.3 **Table 5.24** presents the measures to be secured as part of a Special Order to permit the movement of AILs on the highway as issued by the Secretary of State following an application by the appointed heavy haulage contractor. This is set out in the Schedule of Other Consents and Licences (document reference 3.3).

5.8.4 Embedded measures that will form part of the final design (and/or are established legislative requirements/good practice) have been taken into account as part of the initial assessment presented in **section 5.10** below (i.e., the initial determination of impact magnitude and significance of effects assumes implementation of these measures). This ensures that the measures to which the Applicant is committed are taken into account in the assessment of effects.

5.8.5 Where an assessment identifies likely significant adverse effects, further or secondary mitigation measures may be applied. These are measures that could further prevent, reduce and, where possible, offset these effects. They are defined by IEMA as actions that will require further activity in order to achieve the anticipated outcome and may be imposed as part of the planning consent, or through inclusion in the ES (referred to as secondary mitigation measures in IEMA, 2016). For further or secondary measures both pre-mitigation and residual effects are presented.

Table 5.22: Mitigation measures adopted as part of the Proposed Development

Commitment Number	Measure adopted	How the measure will be secured
Embedded Measures		
ONS05	An Outline Construction Traffic Management Plan (CTMP) has been submitted with the application for development consent (document reference 7.12). CTMP(s) will be developed in accordance with the Outline CTMP prior to commencement of construction and agreed with relevant stakeholders. The CTMP(s) will set out reasonably practicable measures that include: • Managing the numbers and routing of HGVs during the construction phase; • Managing the movement of construction worker traffic during the construction phase; • Details of measures to manage the safe passage of HGV traffic via the local highway network; and • Details of localised road improvements if and where these may be necessary to facilitate the safe use of the existing road network.	DCO Schedule 2, Requirement 8 (Construction Traffic Management Plan).
ONS13	Haul road(s) would be installed within the temporary working area of the onshore HVDC Cable Corridor to minimise impacts during construction on agricultural land and reduce the number of construction vehicles on the local road network, as reasonably practicable.	DCO Schedule 1, Work No. 3 DCO Schedule 2, Requirement 8 (Construction Traffic Management Plan) DCO Schedule 2, Requirement 7 (Management plans) Outline CTMP (document reference 7.12) Outline On-CEMP (document reference 7.7)
ONS21	An Outline Onshore Construction Environmental Management Plan (Outline On-CEMP) has been prepared as part of the application for development consent (document reference 7.7). Onshore Construction Environmental Management Plan(s) (On-CEMP(s)) will be developed to align with the Outline On-CEMP. The On-CEMP(s) will set out measures to reduce Greenhouse Gas emissions associated with the construction of the Proposed Development and will include, where reasonably practicable, the following mitigation measures: • Pre-fabricated elements delivered to the site ready for assembly, which will reduce on-site construction waste and reduce vehicle movements as part of the construction process. • Vehicles used in road deliveries of materials, equipment and waste arisings on- and off-site would be loaded to full capacity, wherever practicable, to minimise the number of journeys associated with the transport of these items.	DCO Schedule 2, Requirement 7 (Management plans)

Commitment Number	Measure adopted	How the measure will be secured
	• All machinery and plant would be procured to adhere with relevant good practice emissions standards at the time of procurement and should be maintained in good repair to remain fuel efficient. • When not in use, vehicles and plant machinery involved in site operations would be switched off to further reduce fuel consumption. • The volume of waste generated would be minimised, and resource efficiency maximised, by applying the principles of the waste hierarchy throughout the construction period. Segregated waste storage should be employed to maximise recycling potential for materials. • Equipment and machinery requiring electricity would only be switched on when required for use. Procedures would be implemented to ensure that staff adhere to good energy management practices, e.g. through turning off lights, computers and heating/air conditioning units when not in use. • Temporary construction haul roads would be developed utilising recycled aggregates to minimise embodied carbon impacts.	
ONS32	An Outline Onshore Construction Environmental Management Plan (On-CEMP) has been prepared as part of the application for development consent (document reference 7.7). On-CEMP(s)) will be developed to align with the prepared Outline On-CEMP. The On-CEMP(s) will incorporate measures to ensure that any potential environmental impacts would be minimised during construction as far as reasonably practicable. The On-CEMP(s) will include measures to maintain and address the following topics: • ecology and nature conservation (including protected species and invasive species); • surface water and groundwater environment (including flood protection and control, drainage, and pollution prevention); • transport and access; • noise management measures; • air quality and dust management; • land use and recreation; • landscape and visual; • historic environment; • climate change; • waste management; • site security; and • health and safety.	DCO Schedule 2, Requirement 7 (Management plans)
ONS89	The Proposed Development includes the provision of an appropriate number of parking facilities for construction workers at the Gammaton Road and Abbotsham Cross temporary construction compounds during the construction phase. The	DCO Schedule 2, Requirement 7 (Management plans) Outline Construction Environmental Management Plan

Commitment Number	Measure adopted	How the measure will be secured
	number of parking spaces required would be determined during the preparation of the compound plans.	(On-CEMP) (Document Reference 7.7) Outline Construction Traffic Management Plan (oCTMP) (Document Reference 7.12)
ONS88	Normal construction working hours would be Monday to Friday 07:00-19:00 and Saturday 07:00-13:00. However, some operations may require work to take place outside these times. For example, abnormal indivisible loads (AIL) may be encouraged or required to travel overnight and crossings of roads may be constructed overnight to minimise disruption to traffic. In certain circumstances, specific works may have to be undertaken on a continuous working basis (00:00 to 00:00, Monday to Sunday). During this period, the contractor may undertake activities that require continuous working hours, which will be notified to the relevant local authority in writing. These activities include, but may not be limited to: • HDD (or other trenchless technology) operations. These activities may require 24-hour machinery operation, dependent on the ground conditions; • continuous concrete pours; • converter station component installation; • oil filling of transformers at the converter stations; • jointing operations along the Onshore HVDC Cable Corridor; and • testing and commissioning. The normal working hours exclude start up and close down activities, which could take place up to one hour either side of the normal working hours. This includes the following activities: • arrival and departure of the workforce at the site and movement around the main Proposed Development that does not require the use of plant; • site inspections and safety checks; and • site housekeeping that does not require the use of plant.	DCO Schedule 2, Requirement 12 (Construction hours) DCO Schedule 2, Requirement 7 (Management plans) Outline Construction Environmental Management Plan (On-CEMP) (document reference 7.7)
ONS90	The original highway will be reinstated after construction work is completed at all vehicle accesses where accommodation works are undertaken to allow the movement of vehicles between the Onshore Infrastructure Area and the highway.	DCO Schedule 2, Requirement 7 (Management plans). Outline Construction Traffic Management Plan (CTMP) (document reference 7.12)
ONS91	For HDD crossings, the drilling compound is anticipated to receive a greater number of HGV movements than the receiving compound (HDD exit point). Where reasonably practicable, the drilling direction will be set to minimise the number of HGV movements through sensitive receptors.	DCO Schedule 2, Requirement 7 (Management plans). Outline Construction Traffic Management Plan (CTMP) (document reference 7.12).
ONS92	Access points from the public highway would be installed to facilitate vehicular access into the	DCO Schedule 2, Requirement 5 (Highway works)

Commitment Number	Measure adopted	How the measure will be secured
	Onshore HVDC Cable Corridor, Landfall and Converter Site, during construction and operation, in accordance with the indicative access drawings (see Volume 2, Appendix 5.6 of the ES) and in consultation with Devon County Council.	Volume 2, Appendix 5.6: Indicative Access Designs of the ES.
Secondary (Further) Mitigation		
ONS29	During construction phase, the Applicant will engage with emergency and health care services and provide notification at least one week prior to the implementation of any temporary road closures, diversions or lane closures. If emergency works are required, the relevant local authorities and emergency services will be notified as soon as reasonably practicable.	DCO Schedule 2, Requirement 7 (Management plans). Outline Construction Environmental Management Plan (On-CTMP) (document reference 7.12)

Table 5.23: Indicative measures included in the Outline CTMP

Measures to be included: Traffic control
Adoption of a CTMP which will set out suitable construction vehicle routes to be adhered to.
Adoption of a CTMP which will set out that a pre-entry condition survey will be undertaken before the start of works and after the substantial completion of works on minor highway links and new junctions used by HGVs to access the Onshore Infrastructure Area. Any damage to the highway that has been demonstrably caused by construction traffic associated with the Proposed Development will be repaired.
Adoption of a CTMP which will set out the construction working hours. These will be agreed in consultation with the relevant authorities. It is expected that in some circumstances, working hours could be extended when this will reduce the magnitude of environmental impacts of construction, such as to increase safety, reduce driver delays or reduce the duration of impacts.
Adoption of a CTMP which will set out restrictions on HGV operating hours along those sections of the highway network that provide access to local schools. The CTMP will restrict HGV movements along the A386 through Bideford during school drop-off and pick-up times.
Adoption of a CTMP which will set out restrictions on HGV operating hours and measures to minimise the number of HGV movements through sensitive areas when access to HDD sites is essential.
Adoption of a CTMP which will set out the requirement for wheel cleaning methods at appropriate locations where it is necessary to eliminate the risk of mud and debris on the highway.
Adoption of a CTMP which will set out measures to minimise dust and dirt associated with the movement of construction vehicles.
Adoption of a CTMP which will set out traffic management measures at those points where cable trenches are cut across highways or where existing access rights are affected.
Adoption of a CTMP which will set out requirements to monitor load sizes and vehicle usage and, where possible, load consolidation and delivery to construction sites using alternative vehicles. Encouragement to re-use HGVs wherever possible, such as backloading. Where practical, local suppliers will be used to minimise the distance travelled by HGV.

Table 5.24: Measures to be secured through Special Order to permit the movement of AILs on the highway following an application by the appointed heavy haulage contractor

Measures to be secured through Special Order
A route for AILs will be identified. The route timing and method of transport of AILs will be discussed and agreed with the relevant highway and bridge authorities, as well as the police.
It is expected that several AILs comprising large components will be transported to the Onshore Infrastructure Area. The heavy haulage contractor appointed to undertake this work will be required to comply with statutory regulations in terms of consulting with the relevant highway and bridge authorities, as well as the police.
The timing of AIL deliveries will be discussed with the relevant highway authorities to minimise delay for other highway users and to minimise risk to highway users. The timing of AIL deliveries to the Onshore Infrastructure Area will be discussed to minimise delays to other road users.
The routeing of AIL deliveries will be agreed with the relevant highway authorities. The delivery of AILs may be undertaken in convoy and under escort. Where AILs require the full width of the carriageway or for unusual manoeuvres at junctions, appropriate temporary road closures and traffic management will be put in place as appropriate to maintain the safety of other highway users.

5.9 Key Parameters for Assessment

Maximum Design Scenario

5.9.1 The maximum design scenarios identified in **Table 5.25** have been selected as those having the potential to result in the greatest effect on an identified receptor or receptor group. These scenarios have been selected from the information provided in Chapter 3: Project Description of the ES. Effects of greater adverse significance are not predicted to arise should any other development scenario, based on details within the Project Design Envelope (e.g., different infrastructure layout), to that assessed here be taken forward in the final design.

Table 5.25: Maximum design scenario considered for the assessment of potential effects

Potential impact	Phase[1]			Maximum design scenario	Justification
	C	O	D		
The impact on driver delay	✓	×	×	**Construction phase** • The onshore HVDC Cable Corridor installation works and Landfall would generate up to 30 HGV movements per day based upon site space, loading/unloading requirements and construction staff activities.. • HDD works would generate an average of up to 5 HGV movements per day. • There would be up to 3 simultaneous workfronts on the onshore HVDC Cable Corridor and Landfall. • Each workfront will consist of 30 staff on each day, so therefore, up to 90 staff working on the onshore HVDC Cable Corridor and Landfall each day. • The Converter Site works would generate up to 77 HGV movements per day based upon site space, loading/unloading requirements and construction staff activities. • There would be up to 310 staff working at the Converter Site each day . • A reasonable estimation is that up to 75% of staff may drive themselves to work with limited access by sustainable modes of travel, while up to 25% of staff would car share. • A construction assessment year of 2028 is adopted as this is the year when the Proposed Development would generate the maximum number of vehicle movements across the local highway network within the study area. • It is assumed that all materials are transported by HGV and no allowance for rail or maritime has been included. • A five and a half day working week (Monday to Friday 07:00 to 19:00 and Saturday 07:00 to 13:00) has been adopted.	The greatest reasonable estimates of daily HGV movements maximise potential impacts. The greatest reasonable estimates of daily construction staff and workfronts maximises the number of construction staff vehicle movements. Assuming that all materials are transported by HGV rather than rail or maritime results in the greatest number of HGV movements and therefore the greatest impact on the highway network. Assuming a reasonable estimation of working days and working hours results in a reasonable balance of maximum construction traffic flows for both daily and weekday peak hour periods.
The impact on severance	✓	×	×		
The impact on non-motorised user delay	✓	×	×		
The impact on non-motorised user amenity and fear and intimidation	✓	×	×		
The impact on road safety	✓	×	×		

Potential impact	Phase[1]			Maximum design scenario	Justification
	C	O	D		
The impact of AILs	✓	×	×	• A reasonable maximum estimate for cable drum dimensions and weights will maximise the transportation requirements for AILs in terms of highway geometries. • A reasonable maximum estimate of the number of heavy electrical components (for example transformers) will maximise the number of AILs.	The maximum weight and dimensions of the cable drums will maximise the AIL requirements and present the greatest potential for impact on transport receptors. The greatest number of heavy electrical components will maximise the number of AILs and present the greatest potential for impact on transport receptors.

[1] C=construction, O=operation and maintenance, D=decommissioning

Access

5.9.2 The Onshore Infrastructure Area includes temporary and permanent accesses to the Converter Site and temporary and permanent accesses to the onshore HVDC Cable Corridor. The locations of the accesses to the Converter Site and to the onshore HVDC Cable Corridor are shown in Volume 2, Figure 5.7.

5.9.3 The access for the Converter Site would include the provision of a new access road from the minor road running north south between Webbery Cross and Gammaton Cross. The indicative design envisages that the access road would be developed from an existing field access, approximately 350 m to the south of the existing Alverdiscott Substation entrance. The precise location of the Converter Site access will be confirmed at the detailed design stage and would allow for AIL deliveries and two-way movement of HGV deliveries to the site. This access will be retained post-construction as an operational access for the converter stations, with access gates and a control access building in place to control access to the Converter Site.

5.9.4 The locations of the accesses to the onshore HVDC Cable Corridor are, as follows:

- Existing access track to Cornborough Sewage Treatment Works;
- Existing field gate along the unnamed road towards Abbotsham, north of Abbotsham Cross Roundabout;
- Existing field gate along the unnamed road towards Littleham, south of Clovelly Road;
- New access along Littleham Road west of the A386; and
- New access along Gammaton Road east of Tennacott Lane.

5.9.5 The proposed onshore HVDC Cable Corridor will require access tracks (referred to as 'haul roads') to allow the movement of construction vehicles and the installation of the cable circuits, in addition to other related works such as temporary construction compounds and laydown areas.

5.9.6 During construction of the Proposed Development, access would be required for HGVs, AILs for certain items (drill rigs, transformers, cable drums, large cranes or construction plant) and for construction workforce traffic. All traffic to the onshore HVDC Cable Corridor would enter the onshore HVDC Cable Corridor at one of the locations stated above before moving along the route on purpose built temporary haul roads. It is proposed access to the Converter Site during construction would also use the onshore HVDC Cable Corridor, in addition to the minor road network depending upon the sequencing of the proposed road widening.

5.9.7 The Proposed Development would include the below improvements to the local highway network, which would facilitate access for HGVs and AILs during both construction and operation and maintenance.

- Cornborough Sewage Treatment Works:
  - widening to the existing access junction to facilitate AILs and HGVs; and
  - widening of the existing private access track to facilitate two-way HGV movements.
- Abbotsham Road:

  - widening of the existing field gate to facilitate AILs and HGVs.
- Littleham Road:
  - widening of the existing field gate to facilitate AILs and HGVs.
- A386:
  - realignment and widening of Littleham Road to facilitate AILs and HGVs and improve the existing levels, gradients and geometries; and
  - signalise the realignment of Littleham Road with the A386.
- Gammaton Road:
  - New access junction to be created.
- Road improvement works at Gammaton Moor, including the following potential options:
  - Widening of Gammaton Road in selective locations to enable full two-way movement of vehicles;
  - A new junction west of Gammaton Moor Crossroads and a new section of private road connecting Gammaton Road with the unnamed road to Converter Site;
  - Potential relocation of the unnamed road to the Converter Site further to the west to facilitate utility diversions (gas and water) within and adjacent to the Converter Site (to be confirmed during the detailed design); and
  - Asymmetric widening either online or offline of the unnamed road to the Converter Site to enable full two-way running for light vehicles.

5.9.8 These improvements are proposed on both the public highway and on private land as part of the Proposed Development, noting that the improvements are subject to further detailed design. As such, all potential improvements may be refined through detailed design. The preliminary highways designs are included in Volume 2, Appendix 5.6: Indicative Access Designs.

Temporary Construction Compounds

5.9.9 A number of temporary construction compounds will be established. These temporary construction compounds may include central offices, welfare facilities and stores, as well as acting as a staging post and secure storage for equipment and component deliveries, as well as for laydown and storage of materials and plant. They may also be required where trenchless techniques, such as HDD are used.

5.9.10 The below temporary construction compounds may be required.

- Main construction compound:
  - Proposed to be situated between Gammaton Road and Tennacott Lane, southeast of East-the-Water. The compound would be used as the main compound for all construction work across the onshore HVDC Cable Corridor and Converter Site.
- Secondary construction compound:

  - Proposed to be located adjacent to the A39 to the north of the Abbotsham Cross roundabout. This compound would also include an HDD compound for the A39 crossing.
- Landfall compound:
  - This compound would be situated at Landfall (Cornborough Range).
- HDD compounds.
- Converter Site compound.

5.9.11 Where required, temporary utility connections will be constructed for the compounds to provide power, water, foul and communications services. The need for these temporary services will be determined by the contractor prior to compound establishment. Following the completion of construction, the temporary construction compounds would be removed and the land restored to its former condition.

Construction Vehicle Trip Generation

5.9.12 The construction vehicle movements of the Proposed Development have been developed based upon estimates of construction materials, engineering requirements and a construction programme of 75 months. The construction traffic flows use the maximum design scenarios identified in **Table 5.25** of this ES chapter. The construction vehicle movement assumptions and calculations are set out in Volume 2, Appendix 5.3: Construction Traffic Generation.

5.9.13 For the purposes of calculating construction traffic flows, the Proposed Development is separated into construction of the Converter Site and construction of the onshore HVDC Cable Corridor, with the number of daily construction vehicle movements and construction staff vehicle movements estimated for both for each month of the construction programme. From that, it has been identified that the peak month for construction vehicle movements of the Proposed Development is March 2027 and the peak months for construction staff vehicle movements of the Proposed Development is October to December 2028 and May to December 2029, which allows the peak number of daily construction vehicle movements to be calculated.

Distribution and Assignment of Construction HGV Trip Movements

5.9.14 The origin of construction HGVs will be predicated upon the procurement of materials at the time of construction; therefore, construction HGVs will likely arrive from a range of origins.

5.9.15 To ensure a robust assessment whereby a maximum number of construction HGVs are assigned onto each highway link, it is assumed that all materials will be procured from outside of the study area. This ensures that construction HGVs are assigned onto all relevant highway links within the study area.

5.9.16 The two entry points to the study area for construction HGVs are from the north and south along the A39. From the north, construction HGVs would enter at Lake Roundabout where the A361 becomes the A39. From the south, construction HGVs would enter from just south of Fairy Cross.

5.9.17 These two origins for construction HGVs would equate to 50% of all construction HGVs arriving from the north and 50% of all construction HGVs arriving from the south. This may fluctuate on a day-to-day basis however and therefore, the assessment presented in this ES chapter assumes 100% of all construction HGVs would route along the A39.

5.9.18 This assumption allows for a maximum number of construction HGVs along each section of the A39 for assessment purposes. The proportion of construction HGVs on all highway links is capped at 100% to ensure the assessment is reasonable.

5.9.19 The number of construction vehicle movements along each highway link in the study area during the construction phase of the Proposed Development reflects the location of accesses to the onshore HVDC Cable Corridor and the location of the Gammaton Road construction compound. The access strategy for construction vehicles is set out in Volume 1, Chapter 3: Project Description of the ES and in the following paragraphs.

5.9.20 During construction of the Proposed Development, the A39 will be used as the primary route for construction vehicles to access the Onshore Infrastructure Area before using either Clovelly Road then an unnamed road towards Littleham, an unnamed road towards Abbotsham, the A386 through Bideford, Barnstaple Street and Manteo Way through East-the-Water then Gammaton Road, or the B3236 then an unnamed road towards Kenwith and Abbotsham to access the onshore HVDC Cable Corridor. HGVs will travel along the highway network directly to the relevant access before moving along the onshore HVDC Cable Corridor route on purpose built temporary haul roads, including to the Converter Site from the construction compound at Gammaton Road, to remove these movements from the public highway.

5.9.21 There are several constraints and potential highway safety issues with the narrow roads located within the study area and the temporary construction compounds along the onshore HVDC Cable Corridor have been situated in areas easily accessible from the highway network. The temporary construction compounds along the onshore HVDC Cable Corridor will therefore be in areas which are accessible from the A39, the A386, Gammaton Road and the B3236 to enable construction vehicles to be directed towards the relevant construction compounds, while reducing movements along minor roads within the study area.

5.9.22 It is proposed that construction vehicle access to the Converter Site adjacent to Alverdiscott Substation site will be taken from a haul road from the construction compound at Gammaton Road. From the construction compound, construction vehicles will use a haul road which will route adjacent to Gammaton Road and adjacent to the minor road leading north from Gammaton Cross towards the Converter Site to remove construction traffic from Gammaton Road and turning through Gammaton Cross.

5.9.23 It is proposed that access to the onshore HVDC Cable Corridor will be required for all types of construction vehicles, including AILs and for certain items such as drill rigs, transformers, cable drums, large cranes and construction plant.

5.9.24 The routes to each access for construction HGVs using highway links within the study area before turning onto temporary haul roads along sections of the onshore HVDC Cable Corridor are set out in **Table 5.26** below. The proposed routeing of HGVs is shown in Volume 2, Figure 5.5.

Table 5.26: Routes to temporary construction compounds

Access	Location	Access route
TCC1	Cornborough Sewage Treatment Works	A39 onto B3236 then onto unnamed road to Kenwith and Abbotsham towards TCC1
TCC2	Abbotsham Road	A39 onto unnamed road to Abbotsham at Abbotsham Cross roundabout towards TCC2
TCC3	Littleham Road	A39 onto Clovelly Road at Abbotsham Cross roundabout then onto unnamed road to Littleham towards TCC3
TCC4	A386	A39 onto A386 at Heywood Road Roundabout then through Bideford then onto Littleham Road towards TCC4
TCC5	Gammaton Road	A39 onto B3233 then onto Manteo Way then through East-the-Water then onto Gammaton Road towards TCC5

5.9.25 The construction vehicles to transport cable drums to the onshore HVDC Cable Corridor and transformers to the Converter Site will be AILs on the public highway in terms of both weight and size. The cable drums and transformers for the Proposed Development will arrive at Appledore Quay by sea before onward travel along the highway network by AILs to either the onshore HVDC Cable Corridor or the Converter Site.

5.9.26 From Appledore Quay, the AILs will travel along Wooda Road and then the A386 towards the A39 at Heywood Road Roundabout, before using the same highway network or temporary haul roads as the HGVs to access the onshore HVDC Cable Corridor or Converter Site. The proposed routeing of AILs is shown in Volume 2, Figure 5.6.

Distribution and Assignment of Construction Staff Vehicle Movements

5.9.27 For consistency with construction HGV movements, it is assumed that all construction staff would arrive from outside of the study area. While some construction staff may live within the study area, this approach ensures the maximum number of construction staff vehicle movements are assigned onto each highway link.

5.9.28 The same two entry points to the study area from the north and south along the A39 (at Lake Roundabout and just south of Fairy Cross) have been used to ensure a reasonable maximum number of construction staff movements are assigned onto each highway link.

5.9.29 It is unknown at this stage exactly where construction staff would travel from outside of the study area, although it is likely that most would travel along the A39 from the north rather than the south given the surrounding urban areas.

5.9.30 Based upon the surrounding urban areas, the assessment presented in this ES chapter assumes 100% of construction staff would arrive from the north along the A39 and 10% of construction staff would arrive from the south along the A39. Having 100% travel from the north instead of 90% would ensure the assessment considers the maximum impact along most of the A39 within the

study area. A smaller proportion of 10% from the south ensures the assessment also considers some impact along the A39 from just south of Fairy Cross. These proportions have been used to reflect day-to-day variation in traffic flow for assessment purposes only as described above.

5.9.31 While the combination of the above equates to 110% of construction staff movements along the A39, the proportion of construction staff movements on all other highway links within the study area from the A39 is capped at 100% to ensure the assessment is reasonable.

5.9.32 All construction staff working at the Converter Site and the onshore HVDC Cable Corridor to the east of the River Torridge would travel to the main construction compound using the A39, Barnstaple Street, Manteo Way and then Gammaton Road.

5.9.33 All construction staff working at the onshore HVDC Cable Corridor to the west of the River Torridge would travel to the secondary construction compound using the A39 and then the unnamed road to Abbotsham, before onward travel by minibus to other work fronts in the Onshore Infrastructure Area.

5.9.34 From the secondary construction compound (TCC2), two minibuses would travel to TCC1 south along Abbotsham Road, the A39, the B3236 then along the unnamed road to Kenwith and Abbotsham towards Cornborough Sewage Treatment Works, two minibuses would travel to TCC3 south along Abbotsham Road, along Clovelly Road and then along Littleham Road, and two minibuses would travel to TCC4 south along Abbotsham Road, the A39 then along the A386 through Bideford onto Littleham Road. The proposed routeing of construction staff movements is shown in Volume 2, Figure 5.4.

5.10 Assessment of Construction Effects

5.10.1 The impacts of the construction phase of the Proposed Development have been assessed on traffic and transport receptors. The impacts arising from the construction phase of the Proposed Development are listed in **Table 5.27**, along with the maximum design scenario against which each impact has been assessed.

5.10.2 In accordance with the IEMA guidelines, the peak daily construction vehicle movements generated by the construction phase of the Proposed Development along with an assessment of these peak daily construction vehicle movements against the 2028 future baseline traffic flows are set out in **Table 5.27**.

Table 5.27: Impact of Proposed Development construction traffic flows

Highway link	Base traffic flows		Construction traffic flows		% increase	
	Total vehicles	HGVs	Total vehicles	HGVs	Total vehicles	HGVs
Link 1: A39 between Lake Roundabout and Roundswell Roundabout	33,805	1,031	710	105	2.1%	10.2%

Highway link	Base traffic flows		Construction traffic flows		% increase	
	Total vehicles	HGVs	Total vehicles	HGVs	Total vehicles	HGVs
Link 2: A39 between Roundswell Roundabout and B3233	21,377	760	710	105	3.3%	13.8%
Link 3: A39 between B3233 and Heywood Road Roundabout	25,001	861	710	105	2.8%	12.2%
Link 4: A39 between Heywood Road Roundabout and B3236 Buckleigh Road	16,229	521	714	105	4.4%	20.1%
Link 5: A39 between B3236 Buckleigh Road and Abbotsham Cross Roundabout	14,782	427	718	105	4.9%	24.6%
Link 6: A39 between Abbotsham Cross Roundabout and Fairy Cross	7,725	243	170	105	2.2%	43.2%
Link 7: B3233 Barnstaple Street between Barnstaple Street Roundabout and Manteo Way	12,180	487	548	77	4.5%	15.8%
Link 8: Manteo Way between Barnstaple Street and Gammaton Road	8,616	295	548	77	6.4%	26.1%
Link 9: Gammaton Road between Manteo Way and Tennacott Lane	833	10	548	77	65.8%	737.1%
Link 10: Gammaton Road between Tennacott Lane and Moorview House	833	10	0	0	0.0%	0.0%
Link 11: Gammaton Moor Road between Moorview House and Alverdiscott Substation access	91	5	0	0	0.0%	0.0%
Link 12: A386 between Heywood Road Roundabout and The Quay	4,656	67	0	0	0.0%	0.0%
Link 13: A386 between Heywood Road Roundabout and Ford Rise	14,231	481	39	35	0.3%	7.3%
Link 14: A386 between Ford Rise and Wesleyan Chapel	9,850	324	39	35	0.4%	10.8%
Link 15: B3236 Buckleigh Road between A39 and Pusehill Road	2,015	21	39	35	1.9%	165.9%
Link 16: Bowood Farm Road between Abbotsham Cross Roundabout and Temporary Construction Compound Access 2	1,634	36	647	35	39.6%	97.9%

Highway link	Base traffic flows		Construction traffic flows		% increase	
	Total vehicles	HGVs	Total vehicles	HGVs	Total vehicles	HGVs
Link 17: Littleham Road between Abbotsham Cross Roundabout and Temporary Construction Compound Access 3	1,869	110	39	35	2.1%	31.7%

5.10.3 In terms of total vehicle movements, only Link 9 is predicted to exceed the respective Rule 1 threshold as defined in the IEMA guidelines set out in **section 5.6** of this ES chapter. No highway links are predicted to exceed the respective Rule 2 threshold.

5.10.4 In terms of HGV movements, Link 6, Link 9, Link 15, Link 16 and Link 17 are predicted to exceed the respective Rule 1 threshold as defined in the IEMA guidelines set out in **section 5.6** of this ES chapter. No highway links are predicted to exceed the respective Rule 2 threshold.

5.10.5 The five highway links of the study area considered for assessment as part of the EIA in accordance with the IEMA guidelines set out in **section 5.6** of this ES chapter are set out in **Table 5.28**.

Table 5.28: Highway links for EIA

Highway link	Sensitivity	Change in daily traffic flow		IEMA rule
		Total vehicles	HGVs	
Link 6: A39 between Abbotsham Cross Roundabout and Fairy Cross	Medium	2.2%	43.2%	Rule 1
Link 9: Gammaton Road between Manteo Way and Tennacott Lane	Negligible	65.8%	737.1%	Rule 1
Link 15: B3236 Buckleigh Road between A39 and Pusehill Road	Low	1.9%	165.9%	Rule 1
Link 16: Bowood Farm Road between Abbotsham Cross Roundabout and Temporary Construction Compound Access 2	Negligible	39.6%	97.9%	Rule 1
Link 17: Littleham Road between Abbotsham Cross Roundabout and Temporary Construction Compound Access 3	Negligible	2.1%	31.7%	Rule 1

5.10.6 In terms of the other highway links in the study area (all highway links except for Link 6, Link 9, Link 15, Link 16 and Link 17), these have been screened out of the EIA assessment in accordance with the IEMA guidelines set out in **section 5.6** of this ES chapter as the environmental effects on traffic and transport receptors along these highway links would be of negligible adverse significance and not significant in EIA terms.

5.10.7 In terms of driver delay, road safety and AILs, the impacts upon each of these has been assessed throughout the whole traffic and transport study area and not only for Link 6, Link 9, Link 15, Link 16 and Link 17.

5.10.8 A description of the likely effect on receptors caused by each identified impact is given below.

The Impact on Driver Delay

5.10.9 Delays to non-development traffic can occur during the construction phase of the Proposed Development for several reasons, including:

- An increase in traffic flows, particularly during peak hours, resulting in increased queuing along highway links and at junctions;
- The passage of slow-moving vehicles such as AILs; and
- Reduction in highway link capacity resulting from changes in carriageway width or other highway characteristics.

5.10.10 The IEMA Rule 1 and Rule 2 thresholds which delimit the extent of EIA do not on their own apply to this impact as this relates to junction/highway capacity and operation and the impact upon this is defined by the TA. Generally, impact upon driver delay may result when the highway network is at or close to capacity and not just with reference to the Rule 1 and Rule 2 thresholds. The IEMA Rule 1 and Rule 2 thresholds are therefore not applied to this potential impact to delimit the extent of assessment.

5.10.11 The extent of assessment for driver delay is considered across the whole study area, from which key junctions or locations of the highway network are identified using observations of existing driver delay, judgement and advice from highway authorities.

5.10.12 DCC was consulted to determine the junctions and sections of the highway network within the study area for assessment of driver delay. As set out in **Table 5.5**, DCC advised that a TA will be required to cover the whole of the highway network within the study area, with specific consideration given to the operation of the Barnstaple Street / Manteo Way T-junction and the A39 during construction of the Proposed Development.

5.10.13 The assessment of driver delay presented in this ES chapter incorporates analysis as part of a TA with a review of the change in the operation of junctions or highway links during the weekday peak hour periods when the baseline traffic flows are at their highest.

5.10.14 Based upon this, an assessment of driver delay has been undertaken with consideration of the following:

- At the Barnstaple Street / Manteo Way T-junction (Link 8);
- Along the section of the A39 within the study area, particularly at Heywood Road Roundabout and Abbotsham Cross Roundabout (Link 1, Link 2, Link 3, Link 4, Link 5 and Link 6);
- At the A386 / Littleham Road T-junction as a result of new traffic signals (Link 14); and
- Along Gammaton Road as a result of haul road crossings (Link 10 and Link 11).

5.10.15 The assessment considers an impact of the Proposed Development on driver delay at the A386 / Littleham Road T-junction, as the Proposed Development would include realignment and widening of Littleham Road and the provision of temporary signals during the 75-month construction programme to facilitate AIL and HGV manoeuvres. The assessment also considers the impact of the Proposed Development on driver delay along Gammaton Road at the location of the haul road crossing.

Sensitivity of the Receptor

Barnstaple Street/Manteo Way T-Junction

5.10.16 The Barnstaple Street / Manteo Way T-junction (Link 8) experiences congestion during highway network peak hours as traffic flow along Barnstaple Street prevents vehicles from turning both left and right from Manteo Way onto Barnstaple Street, resulting in queuing along Manteo Way back from the give-way line. The sensitivity of the receptor is **high**.

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5.10.17 The assessment considers the peak hours and daily variation of traffic along the section of the A39 within the study area (Link 1, Link 2, Link 3, Link 4, Link 5 and Link 6) and therefore through both Heywood Road Roundabout and Abbotsham Cross Roundabout. The sensitivity of the receptor is **low**.

A386 / Littleham Road T-junction

5.10.18 The A386 / Littleham Road T-junction (Link 14) will become signalised during the 75-month construction programme to facilitate AIL and HGV manoeuvres. The sensitivity of the receptor is **negligible**.

Gammaton Road Haul Road Crossing

5.10.19 The haul road between the main construction compound at Gammaton Road and the Converter Site adjacent to Alverdiscott Substation will cross Gammaton Road (Link 10 and Link 11). The sensitivity of the receptor is **negligible**.

Magnitude of Impact

Barnstaple Street / Manteo Way T-Junction

5.10.20 To consider the impact of the Proposed Development on the operation of the Barnstaple Street / Manteo Way T-junction (Link 8), an assessment of the junction using the Priority Intersection Capacity and Delay (PICADY) module of Junctions 10 modelling software has been used.

5.10.21 An MCC and queue length survey was undertaken at the junction between 6am and 8pm on Tuesday 9 July 2024 to inform the PICADY modelling of the junction as part of the assessment. The data from the MCC and queue length survey undertaken at the junction is presented in Volume 2, Appendix 5.1: Site-Specific Traffic Surveys.

5.10.22 The MCC survey undertaken at the junction has established the AM peak hour of the junction as being 8am to 9am and the PM peak hour of the junction as being 3:45pm to 4:45pm. The traffic flows and turning movements through the Barnstaple Street / Manteo Way T-junction on Tuesday 09 July 2024 recorded by the MCC survey are set out in **Table 5.29**.

Table 5.29: Peak hour traffic flows at Barnstaple Street / Manteo Way T-Junction

FROM	TO			
	Barnstaple Street (South)			
	AM (8am to 9am)		PM (3:45pm to 4:45pm)	
	TOTAL	HGV	TOTAL	HGV
Barnstaple Street (North)	233	10	331	7
Manteo Way	164	5	123	2
FROM	**TO**			
	Manteo Way			
	AM (8am to 9am)		PM (3:45pm to 4:45pm)	
	TOTAL	HGV	TOTAL	HGV
Barnstaple Street (North)	235	24	343	13
Barnstaple Street (South)	120	0	179	2
FROM	**TO**			
	Barnstaple Street (North)			
	AM (8am to 9am)		PM (3:45pm to 4:45pm)	
	TOTAL	HGV	TOTAL	HGV
Manteo Way	262	28	243	10
Barnstaple Street (South)	329	11	323	3

5.10.23 The queue length survey undertaken at the junction supports the peak hour traffic flows presented in **Table 5.29** and helps to understand the operation of the junction and the impact of construction traffic on driver delay. The maximum recorded queue along each arm of the Barnstaple Street / Manteo Way T-junction during the AM peak hour (08:00-09:00) and PM peak hour (15:45-16:45) on Tuesday 09 July 2024 recorded by the queue length survey is set out in **Table 5.30**.

Table 5.30: Maximum queue lengths at Barnstaple Street / Manteo Way T-Junction

Peak hours	Maximum queue length		
	Manteo Way Lane 1 (Left Turn)	Manteo Way Lane 2 (Right Turn)	Barnstaple Street Right-Turn Lane
AM Peak (8am to 9am)	2	21+	4
PM Peak (3:45pm to 4:45pm)	2	21+	4

5.10.24 Prior to undertaking an assessment of the impact of construction traffic on the operation of the Barnstaple Street / Manteo Way T-junction, the assessment considers whether the addition of construction traffic flows to the local highway network during the shoulder peak hours of the Barnstaple Street / Manteo Way T-junction (the hours either side of both the AM and PM peak hour) would create a different AM and PM peak hour with 2028 future baseline traffic flows.

5.10.25 By assessing both the AM and PM peak hour and the shoulder peak hours, it can be determined whether the construction traffic flows could adjust hourly traffic flows such that the shoulder peak hours would become the new peak hours of the Barnstaple Street / Manteo Way T-junction in the 2028 future baseline scenario.

5.10.26 The AM peak hour (08:00-09:00) and PM peak hour (15:45-16:45) traffic flows and shoulder peak hour traffic flows for the Barnstaple Street / Manteo Way T-junction in the 2028 future baseline scenario (created by applying relevant traffic growth rates obtained from the DfT National Trip End Model to the DfT traffic counts) are set out in **Table 5.31**.

Table 5.31: AM and PM and shoulder peak hour traffic flows at Barnstaple Street / Manteo Way T-junction

AM Peak			
Peak Hour	Peak Hour Traffic	Shoulder Peak Hour Traffic (-1 Hour)	Shoulder Peak Hour Traffic (+1 Hour)
08:00-09:00	2,779	2,347	2,220
PM Peak			
Peak Hour	Peak Hour Traffic	Shoulder Peak Hour Traffic (-1 Hour)	Shoulder Peak Hour Traffic (+1 Hour)
15:45-16:45	3,199	2,314	2,928

5.10.27 **Table 5.31** indicates that the traffic flow at the Barnstaple Street / Manteo Way T-junction in the 2028 future year baseline scenario would be over 430 vehicles more than the shoulder peaks in the AM peak hour (08:00-09:00) and over 270 vehicles more than the shoulder peaks in the PM peak hour (15:45-16:45).

5.10.28 Based on the construction hours of 07:00-19:00, construction staff will arrive before 07:00 hours and depart after 19:00 hours (see **Table 5.22**). The only construction vehicles travelling through the Barnstaple Street / Manteo Way T-junction during the AM peak hour (08:00-09:00) and PM peak hour (15:45-16:45) would therefore be construction HGVs.

5.10.29 The construction vehicle movement assumptions and calculations set out in Volume 2, Appendix 5.3: Construction Traffic Generation generate a flat profile of construction vehicle trips across the 12-hour working day based upon ongoing deliveries throughout the day and therefore, 7 HGV movements through the Barnstaple Street / Manteo Way T-junction each hour between 07:00 and 19:00 hours.

5.10.30 An additional 7 HGV movements through the junction would be lower than the difference between the peak hour and shoulder peaks in both the AM and PM and therefore, the construction traffic flows would not result in the shoulder peak becoming the new peak hour.

5.10.31 While construction staff would arrive before 07:00 and depart after 19:00 and therefore travel outside of the peak hours and shoulder peaks of the junction, the assessment also considers these movements in determining the peak hours.

5.10.32 The construction vehicle movement assumptions and calculations set out in Volume 2, Appendix 5.3: Construction Traffic Generation indicate that construction staff would generate 233 movements through the junction in the AM and 233 movements through the junction in the PM. It is clear therefore that even with the addition of construction staff vehicle movements in the shoulder peaks, the AM and PM peak hours of the junction would remain as 08:00-09:00 and 15:45-16:45

5.10.33 With this information, the assessment of the Barnstaple Street / Manteo Way T-junction using PICADY considers the impact of construction vehicles in the observed AM peak hour (08:00-09:00) and PM peak hour (15:45-16:45) for the 2028 future baseline scenario. The results of the PICADY modelling are set out in **Table 5.32**, with the full modelling output included in Volume 2, Appendix 5.5: Junctions 10 Modelling Output.

Table 5.32: PICADY modelling of Barnstaple Street / Manteo Way T-junction

2024 baseline								
	AM Peak (08:00-09:00)				PM Peak (15:45-16:45)			
	95% Queue (Veh)	Delay (s)	RFC	Junction Delay (s)	95% Queue (Veh)	Delay (s)	RFC	Junction Delay (s)
Manteo Way to Barnstaple Street (south)	8.8	35.68	0.65	18.23	6.8	41.62	0.62	16.84
Manteo Way to Barnstaple Street (north)	25.3	64.91	0.86		26.2	75.77	0.87	
Barnstaple Street (south) to Manteo Way	1.5	9.12	0.25		3.1	13.13	0.42	

2028 Future Baseline								
	AM Peak (08:00-09:00)				PM Peak (15:45-16:45)			
	95% Queue (Veh)	Delay (s)	RFC	Junction Delay (s)	95% Queue (Veh)	Delay (s)	RFC	Junction Delay (s)
Manteo Way to Barnstaple Street (south)	17.4	85.50	0.87	29.08	16.6	132.44	0.96	29.46
Manteo Way to Barnstaple Street (north)	31.7	88.84	0.92		33.1	108.35	0.94	
Barnstaple Street (south) to Manteo Way	1.2	9.33	0.26		3.3	13.86	0.44	
2028 Future Baseline + Proposed Development								
	AM Peak (08:00-09:00)				PM Peak (15:45-16:45)			
	95% Queue (Veh)	Delay (s)	RFC	Junction Delay (s)	95% Queue (Veh)	Delay (s)	RFC	Junction Delay (s)
Manteo Way to Barnstaple Street (south)	18.6	96.71	0.91	30.61	24.6	186.08	1.01	41.14
Manteo Way to Barnstaple Street (north)	32.4	91.44	0.92		38.4	148.05	1.00	
Barnstaple Street (south) to Manteo Way	1.2	9.44	0.26		3.3	13.86	0.44	

5.10.34 As set out in **Table 5.32**, the PICADY modelling indicates that in the 2028 future baseline scenario, the Barnstaple Street / Manteo Way T-junction would operate with a maximum Ratio of Flow to Capacity (RFC) value of 0.92 in the AM peak hour (08:00-09:00) and 0.96 in the PM peak hour (15:45-16:45), with an overall junction delay of 29 seconds and a delay of 132 seconds for drivers turning right onto Barnstaple Street from Manteo Way.

5.10.35 From these modelling results, it is considered that the junction would operate at capacity in the 2028 future baseline scenario without the addition of construction traffic in both peak hours, with queueing along Manteo Way.

5.10.36 As set out in **Table 5.32,** the PICADY modelling indicates that with the addition of construction traffic in the 2028 future baseline scenario, the Barnstaple Street / Manteo Way T-junction would operate with a maximum RFC value of 0.92 in the AM peak hour (08:00-09:00) and 1.01 in the PM peak hour (15:45-16:45), with an overall maximum junction delay of 41 seconds and a maximum delay of 186 seconds for drivers turning right onto Barnstaple Street from Manteo Way.

5.10.37 These modelling results therefore suggest that the junction would continue to operate at capacity in the 2028 future baseline scenario with the addition of construction traffic.

5.10.38 It must be remembered that PICADY is essentially an empirical software modelling programme, derived during the 1970s when road conditions were less congested and generally for isolated T-junctions. When the programme is used for T-junctions in a congested highway network, such as the Barnstaple Street / Manteo Way T-junction, it can become unstable and unreliable, although it is still a useful aid for transport planners and highway engineers in the assessment process.

5.10.39 It should be noted that there is queuing capacity for 80 vehicles (passenger car units) on Manteo Way from its junction with Barnstaple Street before any such queuing would block back at affect the operation of the Manteo Way / Old Barnstaple Road junction. The queuing on Mateo Way from its junction with Barnstaple Street remains well within that capacity with the Proposed Development and there are no consequential issues in this regard.

5.10.40 While there would be some increase in the delay to drivers turning right onto Barnstaple Street from Manteo Way with the addition of construction traffic, this would be unlikely to be noticeable given the RFC of the junction and queueing without construction traffic. The magnitude is therefore **low**.

A39

5.10.41 To consider the impact of the Proposed Development on the operation of the A39 (Link 1, Link 2, Link 3, Link 4, Link 5 and Link 6), construction traffic flows have been applied to the peak hour 2028 future baseline traffic flows along the A39 in the context of peak hour variation across the week.

5.10.42 Prior to undertaking an assessment of the impact of construction traffic on the operation of the A39, the assessment considers whether the addition of construction traffic flows to the local highway network during the shoulder peak hours of the A39 (the hours either side of both the AM and PM peak hour) would create a different AM and PM peak hour with 2028 future baseline traffic flows. By assessing both the AM and PM peak hour and the shoulder peak hours, it can be determined whether the construction traffic flows could adjust hourly traffic flows such that the shoulder peak hours would become the new peak hours of the A39 in the 2028 future baseline scenario.

5.10.43 A DfT traffic count (58217) located along the A39 between the B3233 junction and Heywood Road Roundabout (Link 3) as shown in Volume 2, Figure 5.8, has been used to determine the AM and PM peak hours of the A39 in the 2028 future baseline scenario as these DfT traffic counts provide two-way traffic flow data for each hour of the day between 07:00 and 19:00.

5.10.44 From this DfT traffic count, the AM peak hour for the A39 has been established as being 08:00-09:00 hours and the PM peak hour for the A39 has been established as being 16:00-17:00 hours.

5.10.45 The AM peak hour (08:00-09:00) and PM peak hour (16:00-17:00) traffic flows and shoulder peak hour traffic flows for the A39 between the B3233 junction and Heywood Road Roundabout (Link 3) in the 2028 future baseline scenario (created by applying relevant traffic growth rates obtained from the DfT National Trip End Model to the DfT traffic counts) are set out in **Table 5.33**.

Table 5.33: AM and PM and shoulder peak hour traffic flows along A39

AM Peak			
Peak Hour	**Peak Hour Traffic**	**Shoulder Peak Hour Traffic (-1 Hour)**	**Shoulder Peak Hour Traffic (+1 Hour)**
08:00-09:00	2,019	1,793	1,776
PM Peak			
Peak Hour	**Peak Hour Traffic**	**Shoulder Peak Hour Traffic (-1 Hour)**	**Shoulder Peak Hour Traffic (+1 Hour)**
16:00-17:00	2,179	1,904	2,132

5.10.46 **Table 5.33** indicates that the traffic flow along the A39 between the B3233 junction and Heywood Road Roundabout (Link 3) in the 2028 future baseline scenario would be over 220 vehicles more than the shoulder peaks in the AM peak hour (08:00-09:00) and over 40 vehicles more than the shoulder peaks in the PM peak hour (16:00-17:00).

5.10.47 Based on the construction hours of 07:00-19:00, construction staff will arrive before 07:00 hours and depart after 19:00 hours. The only construction vehicles travelling along the A39 within the study area during the shoulder peak hours would therefore be construction HGVs.

5.10.48 The construction vehicle movement assumptions and calculations set out in Volume 2, Appendix 5.3: Construction Traffic Generation assume a flat profile of construction vehicle trips across the 12-hour working day and therefore, 9 HGV movements along the A39 each hour between 07:00 and 19:00 hours.

5.10.49 An additional 9 HGV movements along the A39 in the shoulder peak hours would be lower than the difference between peak hour and shoulder peaks in both the AM and PM and therefore, the construction flows would not result in the shoulder peak becoming the new peak hour.

5.10.50 While construction staff would arrive before 07:00 and depart after 19:00 and therefore travel outside of the peak hours and shoulder peaks of the A39, the assessment considers if staff movements in the hour after (07:00-08:00) and hour before (18:00-19:00) would adjust hourly traffic flows such that the hour after (07:00-08:00) and hour before (18:00-19:00) would become the new peak hours of the A39 in the 2028 future baseline scenario, as set out in **Table 5.34**.

Table 5.34: AM and PM and shoulder peak hour traffic flows along A39 with staff movements

AM Peak		
Peak Hour	**Peak Hour Traffic**	**07:00-08:00**
08:00-09:00	2,019	1,793

AM Peak		
PM Peak		
Peak Hour	Peak Hour Traffic	18:00-19:00
16:00-17:00	2,179	1,354

5.10.51 The construction vehicle movement assumptions and calculations set out in Volume 2, Appendix 5.3: Construction Traffic Generation indicate that construction staff would generate 300 movements along the A39 in the AM and 300 movements along the A39 in the PM.

5.10.52 **Table 5.34** indicates that as much as 75% of staff would have to arrive late to adjust hourly traffic flows such that the hour (07:00-08:00) after the arrival time would become the new AM peak hour of the A39 in the 2028 future baseline scenario. This would be very unlikely given the requirements of the construction programme. All staff departing early (considered for assessment purposes only) would not adjust hourly traffic flows such that there would be a change in the PM peak hour.

5.10.53 With this information, the assessment of the A39 considers the impact of construction vehicles in the observed AM peak hour (08:00-09:00) and PM peak hour (16:00-17:00) in the 2028 future baseline scenario in the context of peak hour variation across the week.

5.10.54 Radar surveys at two locations along the A39, between Heywood Road Roundabout and Buckleigh Road (Link 4) and between Buckleigh Road and Abbotsham Cross Roundabout (Link 5), as shown in Volume 2, Figure 5.8, were undertaken between Tuesday 09 July 2024 and Monday 15 July 2024 to obtain variation in peak hour traffic flow along the A39 across the week.

5.10.55 The maximum variation in traffic flows along the A39 in both the AM peak hour (08:00-09:00) and PM peak hour (16:00-17:00) across the week in the 2028 future baseline scenario (created by applying relevant traffic growth rates obtained from the DfT National Trip End Model to the DfT traffic counts) from data obtained from the two radar surveys are set out in **Table 5.35** and **Table 5.36**.

Table 5.35: AM and PM maximum variation in traffic flow along Link 4

Maximum Variation in Traffic Flow		
	Total Vehicles	% Variation
AM Peak (08:00-09:00)	181	18.9%
PM Peak (16:00-17:00)	193	20.2%

Table 5.36: AM and PM maximum variation in traffic flow along Link 5

Maximum Variation in Traffic Flow		
	Total Vehicles	**% Variation**
AM Peak (08:00-09:00)	183	23.1%
PM Peak (16:00-17:00)	166	18.6%

5.10.56 The data obtained from the radar surveys indicate that across the week, the section of the A39 within the study area experiences variations in traffic flow of between 19% and 23% in the AM peak (08:00-09:00) and between 19% and 20% in the PM peak (16:00-17:00).

5.10.57 Additional data obtained from DCC traffic surveys (4133) undertaken along the A39 indicate that the peak hour two-way traffic flows and both the AM and PM peak hours in July are higher than those considered for the assessment, although there would still be variations in traffic flow across the week.

5.10.58 An additional 9 HGV movements along the A39 in both the AM peak (08:00-09:00) and PM peak (16:00-17:00) would therefore be within the daily variation in traffic flows. The magnitude is therefore **negligible**.

A386 / Littleham Road T-junction

5.10.59 It is proposed that temporary traffic signals will be installed at the A386/Littleham Road T-junction (Link 14) as part of traffic management measures during the construction phase of the Proposed Development. The proposed use of the traffic signals will be discussed and agreed with DCC.

5.10.60 The Traffic Signs Manual Chapter 8 Part 01 discusses levels of traffic flows that can cause delays when temporary traffic signals are used for works. Paragraph D5.1.6 states: '*On roads where flows are very high, overload of the controlled area is possible and exceptional delays may result. This can occur with two-way flows as low as 1,300 vehicles per hour (for sites about 50 m long) and with a one-way flow of 900 vehicles per hour (for longer sites with balanced flows) with signal control*'.

5.10.61 ATC data for Link 14 included in **Table 5.16**, indicates that an average of 402 two-way vehicle movements are undertaken per hour along the A386, which is well within the traffic flow where exceptional delays may result.

5.10.62 While these guidelines are more applicable for shuttle working road works where a junction is not involved, the traffic flows are considerably below the guidelines and therefore, it is considered that significant delay to drivers on both the A386 and Littleham Road will not occur with the introduction of traffic signals.

5.10.63 Based upon the above, the impact of the introduction of traffic signals at the A386/Littleham Road junction on driver delay is predicted to be of local spatial extent and short-term duration. The magnitude is therefore **negligible**.

Gammaton Road Haul Road Crossing

5.10.64 The haul road crossing of Gammaton Road has the potential to result in driver delay along Gammaton Road by introducing a new junction and therefore more opposing vehicle movements.

5.10.65 ATC data for Link 10 included in **Table 5.16** indicates that an average of 34 two-way vehicle movements are undertaken per hour along Gammaton Road. Using professional judgement based upon the form that the haul road crossing is likely to take, the peak hour traffic flow along Gammaton Road is much lower than the level at which drivers are likely to experience delay.

5.10.66 Based upon the above, the impact of the haul road crossing along Gammaton Road is predicted to be of local spatial extent and short-term duration. The magnitude is therefore **negligible**.

Significance of the Effect

Barnstaple Street / Manteo Way T-Junction

5.10.67 The magnitude of the impact on driver delay at the Barnstaple Street /Manteo Way T-junction is **low** and the sensitivity of the receptor is **high**. The effect will, therefore, be of a **minor** adverse significance, which is not significant.

A39

5.10.68 The magnitude of the impact on driver delay along the A39 within the study area is **negligible** and the sensitivity of the receptor is **low**. The effect will, therefore, be of a **negligible** adverse significance, which is not significant.

A386 / Littleham Road T-junction

5.10.69 The magnitude of the impact on driver delay at the A386/Littleham Road junction due to the proposed traffic signals is **negligible** and the sensitivity of the receptor is **negligible**. The effect will, therefore, be of a **negligible** adverse significance, which is not significant.

Gammaton Road Haul Road Crossing

5.10.70 The magnitude of the impact on driver delay along Gammaton Road due to the haul road crossing is **negligible** and the sensitivity of the receptor is **negligible**. The effect will, therefore, be of a **negligible** adverse significance, which is not significant.

The Impact on Severance

5.10.71 In the context of traffic and transport, severance is the perceived division that can occur within a community when it becomes separated by major transport infrastructure or factors that separate people from places and other people. This may result from the difficulty of crossing a heavily trafficked highway or a physical barrier created by infrastructure.

5.10.72 The IEMA guidelines set out that proportional increases in total traffic flows along a highway link of between 30% and 60% may result in a low impact upon

severance, increases of between 60% and 90% may result in a medium impact upon severance and increases of more than 90% may result in a high impact upon severance.

5.10.73 The changes in total traffic flow as a result of the construction phase of the Proposed Development on three of the five highway links (Link 6, Link 15 and Link 17) are all lower than the 30% required for a slight effect to occur. Link 9 and Link 16 will experience an increase in total traffic flow as a result of the construction phase of the Proposed Development of 66% and 40% respectively.

A39 between Abbotsham Cross Roundabout and Fairy Cross (Link 6)

Sensitivity of the Receptor

5.10.74 There is a small group of dwellings fronting the carriageway in Fairy Cross with other residential development set back the other side of the A39. The sensitivity of the receptor is **low**.

Magnitude of Impact

5.10.75 The change in traffic flow along Link 6 as a result of the construction phase of the Proposed Development will be an increase of 2%. The impact is predicted to be of local spatial extent and short-term duration. The magnitude is therefore **negligible**.

Significance of the Effect

5.10.76 Overall, the magnitude of the impact is **negligible** and the sensitivity of the receptor is **low**. The effect will, therefore, be of a **negligible** adverse significance, which is not significant.

Gammaton Road between Manteo Way and Tennacott Lane (Link 9)

Sensitivity of the Receptor

5.10.77 Link 9 is rural in nature with no footway provision adjacent to the carriageway to reflect the limited footfall. There are no built-up frontages onto either side for which severance could occur. The sensitivity of the receptor is **negligible**.

Magnitude of Impact

5.10.78 The change in traffic flow along Link 9 as a result of the construction phase of the Proposed Development will be an increase of 66%; however, there are no built-up frontages onto either side for which severance could occur. The impact is predicted to be of local spatial extent and short-term duration. The magnitude is therefore **medium**.

Significance of the Effect

5.10.79 Overall, the magnitude of the impact is **medium** and the sensitivity of the receptor is **negligible**. The effect will, therefore, be of **negligible** adverse significance, which is not significant.

B3236 Buckleigh Road between A39 and Pusehill Road (Link 15)

Sensitivity of the Receptor

5.10.80 There is a care home and assisted living residences to the south of Buckleigh Road set back behind adequate screening, although no other development exists along the carriageway which will require people to cross or for which severance could occur. The sensitivity of the receptor is **low**.

Magnitude of Impact

5.10.81 The change in traffic flow along Link 15 as a result of the construction phase of the Proposed Development will be an increase of 2%. The impact is predicted to be of local spatial extent and short-term duration. The magnitude is therefore **negligible**.

Significance of the Effect

5.10.82 Overall, the magnitude of the impact is **negligible** and the sensitivity of the receptor is **low**. The effect will, therefore, be of a **negligible** adverse significance, which is not significant.

Bowood Farm Road between Abbotsham Cross Roundabout and Temporary Construction Compound Access 2 (Link 16)

Sensitivity of the Receptor

5.10.83 Link 16 is rural in nature with no footway provision adjacent to the carriageway to reflect the limited footfall. The sensitivity of the receptor is **negligible**.

Magnitude of Impact

5.10.84 The change in traffic flow along Link 16 as a result of the construction phase of the Proposed Development will be an increase of 40%. The impact is predicted to be of local spatial extent and short-term duration. The magnitude is therefore **low**.

Significance of the Effect

5.10.85 Overall, the magnitude of the impact is **low** and the sensitivity of the receptor is **negligible**. The effect will, therefore, be of **negligible** adverse significance, which is not significant.

Littleham Road between Abbotsham Cross Roundabout and Temporary Construction Compound Access 3 (Link 17)

Sensitivity of the Receptor

5.10.86 Link 17 is rural in nature with no footway provision adjacent to the carriageway to reflect the limited footfall. The sensitivity of the receptor is **negligible**.

Magnitude of Impact

5.10.87 The change in traffic flow along Link 17 as a result of the construction phase of the Proposed Development will be an increase of 2%. The impact is predicted to be of local spatial extent and short-term duration. The magnitude is therefore **negligible**.

Significance of the Effect

5.10.88 Overall, the magnitude of the impact is **negligible** and the sensitivity of the receptor is **negligible**. The effect will, therefore, be of a **negligible** adverse significance, which is not significant.

The Impact on Non-Motorised User Delay

5.10.89 The IEMA guidelines set out that the assessment of pedestrian delay serves as a proxy for the delay that other modes of non-motorised users may experience when crossing roads.

5.10.90 Changes in the volume, composition or speed of traffic may affect the ability of people to cross roads. In general, increases in traffic levels are likely to lead to greater increases in delay. Delays will also depend upon the general level of pedestrian and non-motorised user activity, visibility and general physical conditions.

5.10.91 Given the range of local factors and conditions that can influence non-motorised user delay, for example, a discrete delay may have a lesser impact in an urban environment than a rural setting, the IEMA guidelines do not set out definitive thresholds against which to assess pedestrian and non-motorised user delay. The IEMA guidelines recommends that the competent traffic and movement expert uses judgement to determine whether any changes in pedestrian and non-motorised user delay may be significant.

5.10.92 The previous IEMA guidance document which the IEMA guidelines replaced (Guidelines for the Environmental Assessment of Road Traffic, IEMA, 1993) set out that pedestrian delay is perceptible or considered significant beyond a delay threshold of 10 seconds, for a highway link with no crossing facilities. It goes on to say that a 10 second pedestrian delay in crossing a road broadly equates to a two-way link flow of approximately 1,400 vehicle movements per hour. This means that where two-way traffic flows on a road exceed 1,400 vehicle movements per hour, then a pedestrian seeking to cross that road will perceive a delay.

5.10.93 Although this guidance has been superseded, it does provide a useful guide to assist when considering whether any changes in pedestrian and non-motorised user delay may be significant.

5.10.94 To consider the potential for pedestrian and non-motorised user delay to occur on each of the five highway links, the maximum peak hour base traffic flows, along with the addition of construction traffic flows, has been considered.

A39 between Abbotsham Cross Roundabout and Fairy Cross (Link 6)

Sensitivity of the Receptor

5.10.95 The A39 is a principal highway route with a 60mph speed limit. Most of Link 6 has no footway provision and no at-grade crossing facilities as there is limited pedestrian and non-motorised user demand along the majority of the route. A wide footway exists along both sides of the carriageway in Fairy Cross given the small number of dwellings which front the carriageway, although there are no pedestrian crossing facilities along the A39 through the village. The sensitivity of the receptor is **low**.

Magnitude of Impact

5.10.96 It is predicted that in 2028, Link 6 will have a base hourly traffic flow of 322 vehicles and an hourly traffic flow of 329 vehicles with construction traffic. This is lower than the 1,400 vehicles per hour whereby non-motorised user delay will be perceptible. The impact is predicted to be of local spatial extent and short term duration. The magnitude is therefore **negligible**.

Significance of the Effect

5.10.97 Overall, the magnitude of the impact is **negligible** and the sensitivity of the receptor is **low**. The effect will, therefore, be of a **negligible** adverse significance, which is not significant.

Gammaton Road between Manteo Way and Tennacott Lane (Link 9)

Sensitivity of the Receptor

5.10.98 Link 9 is rural in nature with no footway provision adjacent to the carriageway to reflect the limited footfall along this route. No crossing facilities are required as no development exists either side of the highway. The sensitivity of the receptor is **negligible**.

Magnitude of Impact

5.10.99 It is predicted that in 2028, Link 9 will have a base hourly traffic flow of 35 vehicles and an hourly traffic flow of 58 vehicles with construction traffic. This is lower than the 1,400 vehicles per hour whereby non-motorised user delay will be perceptible. The impact is predicted to be of local spatial extent and short term duration. The magnitude is therefore **negligible**.

Significance of the Effect

5.10.100 Overall, the magnitude of the impact is **negligible** and the sensitivity of the receptor is **negligible**. The effect will, therefore, be of a **negligible** adverse significance, which is not significant.

B3236 Buckleigh Road between A39 and Pusehill Road (Link 15)

Sensitivity of the Receptor

5.10.101 Link 15 is rural in nature with no footway provision adjacent to the carriageway to reflect the limited footfall along this route. No crossing facilities are required as very little development exists either side of the highway. The sensitivity of the receptor is **negligible**.

Magnitude of Impact

5.10.102 It is predicted that in 2028, Link 15 will have a base hourly traffic flow of 84 vehicles and an hourly traffic flow of 86 vehicles with construction traffic. This is lower than the 1,400 vehicles per hour whereby non-motorised user delay will be perceptible. The impact is predicted to be of local spatial extent and short term duration. The magnitude is therefore **negligible**.

Significance of the Effect

5.10.103 Overall, the magnitude of the impact is **negligible** and the sensitivity of the receptor is **negligible**. The effect will, therefore, be of a **negligible** adverse significance, which is not significant.

Bowood Farm Road between Abbotsham Cross Roundabout and Temporary Construction Compound Access 2 (Link 16)

Sensitivity of the Receptor

5.10.104 Link 16 is rural in nature with no footway provision adjacent to the carriageway to reflect the limited footfall along this route. No crossing facilities are required as no development exists either side of the highway. The sensitivity of the receptor is **negligible**.

Magnitude of Impact

5.10.105 It is predicted that in 2028, Link 16 will have a base hourly traffic flow of 68 vehicles and an hourly traffic flow of 95 vehicles with construction traffic. This is lower than the 1,400 vehicles per hour whereby non-motorised user delay will be perceptible. The impact is predicted to be of local spatial extent and short term duration. The magnitude is therefore **negligible**.

Significance of the Effect

5.10.106 Overall, the magnitude of the impact is **negligible** and the sensitivity of the receptor is **negligible**. The effect will, therefore, be of a **negligible** adverse significance, which is not significant.

Littleham Road between Abbotsham Cross Roundabout and Temporary Construction Compound Access 3 (Link 17)

Sensitivity of the Receptor

5.10.107 Link 17 is rural in nature with no footway provision adjacent to the carriageway to reflect the limited footfall along this route. No crossing facilities are required as no development exists either side of the highway. The sensitivity of the receptor is **negligible**.

Magnitude of Impact

5.10.108 It is predicted that in 2028, Link 17 will have a base hourly traffic flow of 78 vehicles and an hourly traffic flow of 80 vehicles with construction traffic. This is lower than the 1,400 vehicles per hour whereby non-motorised user delay will be perceptible. The impact is predicted to be of local spatial extent and short term duration. The magnitude is therefore **negligible**.

Significance of the Effect

5.10.109 Overall, the magnitude of the impact is **negligible** and the sensitivity of the receptor is **negligible**. The effect will, therefore, be of a **negligible** adverse significance, which is not significant.

The Impact on Non-Motorised User Amenity and Fear and Intimidation

5.10.110 The term non-motorised user amenity is broadly defined as the relative pleasantness of a journey and is considered to be affected by traffic flow, traffic composition and footway width/separation from traffic. This definition also includes fear and intimidation.

5.10.111 The IEMA guidelines refers to a tentative threshold for judging the significance of changes in non-motorised user amenity where the traffic flow (or its HGV component) is halved or doubled.

5.10.112 The IEMA guidelines set out that fear and intimidation from traffic, in terms of vehicular criteria, encompasses total traffic movements, HGV movements and vehicle speeds. It assigns a 'degree of hazard' score to each of these from which a total degree of hazard score is calculated and from which impacts can then be determined. This is calculated using the criteria set out in the IEMA guidelines, which is replicated in **Table 5.37** below.

Table 5.37: Degree of hazard score criteria

Average traffic flow over 18-hour day (vehicles/hour) (a)	Total 18-hour heavy goods vehicle flow (b)	Average vehicle speed (c)	Degree of hazard score
1,800 +	3,000 +	>40	30
1,200–1,800	2,000–3,000	30-40	20
600–1,200	1,000–2,000	20-30	10
<600	<1,000	<20	0

5.10.113 A 'total hazard score' is then calculated for each highway link for traffic flow scenarios. The IEMA guidelines provides an example of the total hazard score calculation to identify a level of fear and intimidation and is replicated in **Table 5.38** below.

Table 5.38: Total hazard score and level of fear and intimidation calculation

Level of fear and intimidation	Total hazard score (a) + (b) + (c)
Extreme	71+
Great	41-70
Moderate	21-40
Small	0-20

A39 between Abbotsham Cross Roundabout and Fairy Cross (Link 6)

Sensitivity of the Receptor

5.10.114 The A39 is a principal highway route with a 60 mph speed limit. Most of Link 6 has no footway provision and no at-grade crossing facilities as there is no/limited non-motorised user demand along the majority of the route. A wide footway exists along both sides of the carriageway in Fairy Cross given the small number of dwellings which front the carriageway, although there are no pedestrian crossing facilities along the A39 through the village. The sensitivity of the receptor is **low**.

Magnitude of Impact

Table 5.39: Degree of hazard and level of fear and intimidation for Link 6

Average traffic flow over 18-hour day – all vehicles/hour	Total 18-hour HGV flow	Posted vehicle speed	Total hazard score	Level of fear and intimidation
2028 base traffic flows				
429	243	60	30	Moderate

Average traffic flow over 18-hour day – all vehicles/hour	Total 18-hour HGV flow	Posted vehicle speed	Total hazard score	Level of fear and intimidation
2028 base traffic flows with construction traffic				
439	348	60	30	Moderate

5.10.115 It is predicted that there will be no step change in the level of fear and intimidation along Link 6 as a result of construction traffic. The magnitude is therefore **negligible**.

Significance of the Effect

5.10.116 Overall, the magnitude of the impact is **negligible** and the sensitivity of the receptor is **low**. The effect will, therefore, be of a **negligible** adverse significance, which is not significant.

Gammaton Road between Manteo Way and Tennacott Lane (Link 9)

Sensitivity of the Receptor

5.10.117 Link 9 is rural in nature with no footway provision adjacent to the carriageway to reflect the limited footfall along this route. No crossing facilities are required as no development exists either side of the highway. The sensitivity of the receptor is **negligible**.

Magnitude of Impact

Table 5.40: Degree of hazard and level of fear and intimidation for Link 9

Average traffic flow over 18-hour day – all vehicles/hour	Total 18-hour HGV flow	Posted vehicle speed	Total hazard score	Level of fear and intimidation
2028 base traffic flows				
46	10	30	10	Small
2028 base traffic flows with construction traffic				
77	87	30	10	Small

5.10.118 It is predicted that there will be no step change in the level of fear and intimidation along Link 9 as a result of construction traffic. The magnitude is therefore **negligible**.

Significance of the Effect

5.10.119 Overall, the magnitude of the impact is **negligible** and the sensitivity of the receptor is **negligible**. The effect will, therefore, be of a **negligible** adverse significance, which is not significant.

B3236 Buckleigh Road between A39 and Pusehill Road (Link 15)

Sensitivity of the Receptor

5.10.120 Link 15 is rural in nature with no footway provision adjacent to the carriageway to reflect the limited footfall along this route. No crossing facilities are required as very little development exists either side of the highway. The sensitivity of the receptor is **negligible**.

Magnitude of Impact

Table 5.41: Degree of hazard and level of fear and intimidation for Link 15

Average traffic flow over 18-hour day – all vehicles/hour	Total 18-hour HGV flow	Posted vehicle speed	Total hazard score	Level of fear and intimidation
2028 base traffic flows				
112	21	40	20	Small
2028 base traffic flows with construction traffic				
114	56	40	20	Small

5.10.121 It is predicted that there will be no step change in the level of fear and intimidation along Link 15 as a result of construction traffic. The magnitude is therefore **negligible**.

Significance of the Effect

5.10.122 Overall, the magnitude of the impact is **negligible** and the sensitivity of the receptor is **negligible**. The effect will, therefore, be of a **negligible** adverse significance, which is not significant.

Bowood Farm Road between Abbotsham Cross Roundabout and Temporary Construction Compound Access 2 (Link 16)

Sensitivity of the Receptor

5.10.123 Link 16 is rural in nature with no footway provision adjacent to the carriageway to reflect the limited footfall along this route. No crossing facilities are required as no development exists either side of the highway. The sensitivity of the receptor is **negligible**.

Magnitude of Impact

Table 5.42: Degree of hazard and level of fear and intimidation for Link 16

Average traffic flow over 18-hour day – all vehicles/hour	Total 18-hour HGV flow	Posted vehicle speed	Total hazard score	Level of fear and intimidation
2028 base traffic flows				
91	36	40	20	Small
2028 base traffic flows with construction traffic				
127	71	40	20	Small

5.10.124 It is predicted that there will be no step change in the level of fear and intimidation along Link 16 as a result of construction traffic. The magnitude is therefore **negligible**.

Significance of the Effect

5.10.125 Overall, the magnitude of the impact is **negligible** and the sensitivity of the receptor is **negligible**. The effect will, therefore, be of a **negligible** adverse significance, which is not significant.

Littleham Road between Abbotsham Cross Roundabout and Temporary Construction Compound Access 3 (Link 17)

Sensitivity of the Receptor

5.10.126 Link 17 is rural in nature with no footway provision adjacent to the carriageway to reflect the limited footfall along this route. No crossing facilities are required as no development exists either side of the highway. The sensitivity of the receptor is **negligible**.

Magnitude of Impact

Table 5.43: Degree of hazard and level of fear and intimidation for Link 17

Average traffic flow over 18-hour day – all vehicles/hour	Total 18-hour HGV flow	Posted vehicle speed	Total hazard score	Level of fear and intimidation
2028 base traffic flows				
104	110	60	30	Moderate
2028 base traffic flows with construction traffic				
106	145	60	30	Moderate

5.10.127 It is predicted that there will be no step change in the level of fear and intimidation along Link 17 as a result of construction traffic. The magnitude is therefore **negligible**.

Significance of the Effect

5.10.128 Overall, the magnitude of the impact is **negligible** and the sensitivity of the receptor is **negligible**. The effect will, therefore, be of a **negligible** adverse significance, which is not significant.

The Impact on Road Safety

5.10.129 It is possible to estimate the impact of increased traffic on road safety from existing PIA records, national statistics and the type and quantity of traffic generated by the Proposed Development.

5.10.130 The IEMA Rule 1 and Rule 2 thresholds which delimit the extent of EIA do not on their own apply to this impact as this relates to the consideration of road safety along a highway and the impact upon this which is defined by the TA. Generally, a potential impact upon road safety may result at locations where there is an existing road safety issue or where proposals may create a road safety issue. The IEMA Rule 1 and Rule 2 thresholds are therefore not applied to this potential impact to delimit the extent of assessment.

5.10.131 The extent of assessment for road safety is considered across the whole study area, from which key locations of the highway network are identified from an analysis of PIA records and advice from highway authorities.

5.10.132 As shown in **Table 5.17**, analysis of PIA records obtained from DCC covering the latest available five-year period between 01/01/2019 and 31/12/2023 has indicated five locations in the study area either along the A39 or the A386 through Bideford where a cluster of injury accidents (a site with five or more injury accidents within a 50m radius over a five-year period) has been recorded.

5.10.133 As set out in **section 5.7**, no clusters of injury accidents were recorded at other locations (Alverdiscott Road adjacent to Bideford East-the-Water Primary School and Manteo Way) within the study area requested for analysis by DCC as part of the section 42 consultation to the PEIR.

5.10.134 While no clusters of injury accidents have been recorded along either Gammaton Road between Manteo Way and the access to TCC5, the B3236 between the A39 and the access to TCC1 at Cornborough Sewage Treatment Works, or Abbotsham Road between the A39 and the access to TCC3, analysis of the likely increase in HGV manoeuvres along these highway links as a result of the Proposed Development has also been undertaken.

Sensitivity of the Receptor

5.10.135 The sections of the A39 including Torridge Bridge, the junction with the B3233 and Heywood Roundabout are in Link 2, Link 3 and Link 4. The sensitivity of the receptor for Link 2, Link 3 and Link 4 are **low**.

5.10.136 The section of the A386 including the A386 / Old Bideford Bridge / Bridge Street and Jubilee Square is in Link 13. The sensitivity of the receptor for Link 13 is **high**.

5.10.137 The section of Gammaton Road between Manteo Way and the access to TCC5 is Link 9. The sensitivity of the receptor for Link 9 is **negligible**.

5.10.138 The section of the B3236 between the A39 and the access to TCC1 at Cornborough Sewage Treatment Works is Link 15. The sensitivity of the receptor for Link 15 is **low**.

5.10.139 The section of Abbotsham Road between the A39 and the access to TCC3 is Link 16. The sensitivity of the receptor for Link 16 is **negligible**.

Magnitude of Impact

5.10.140 For the A39, the PIA data has indicated no consistent contributory factors to injury accidents within the three clusters along Torridge Bridge, at the junction with the B3233 and at Heywood Roundabout. Given the Proposed Development would have no more than a 3% increase in total traffic flow along the A39 and no discernible change in traffic composition along Torridge Bridge, at the junction with the B3233 and at Heywood Roundabout, it is concluded that the Proposed Development would not change the injury accident rate along the relevant highway links of the A39 by any noticeable amount.

5.10.141 For the A386, the PIA data has indicated no consistent contributory factors to injury accidents within the two clusters at the A386 / Old Bideford Bridge / Bridge Street mini roundabout junction and adjacent to Jubilee Square both within Bideford. Given the Proposed Development would have a negligible increase in total traffic flow and no discernible change in traffic composition along the A386 through Bideford, it is concluded that the Proposed Development would not change the injury accident rate along the relevant highway links of the A386 by any noticeable amount.

5.10.142 The section of Gammaton Road between Manteo Way and the access to TCC5 would experience a significant increase in HGV flows as a result of the Proposed Development in the context of very low baseline HGV flows. The widening of Gammaton Road between Manteo Way and the access to TCC5 would enable full two-way movement of vehicles and would enable HGVs to safely manoeuvre.

5.10.143 The section of the B3236 between the A39 and the access to TCC1 at Cornborough Sewage Treatment Works would experience a significant increase in HGV flows as a result of the Proposed Development in the context of very low baseline HGV flows. The access to TCC1 has been designed to safely accommodate right-in / left-out HGV manoeuvres from and to the B3236, while the centreline and alignment of the B3236 carriageway should enable HGVs to safely manoeuvre from and to the A39.

5.10.144 The section of Abbotsham Road between the A39 and the access to TCC3 would experience a significant increase in HGV flows as a result of the Proposed Development in the context of very low baseline HGV flows. The access to TCC3 has been designed to safely accommodate left-in / right-out manoeuvres from and to Abbotsham Road, while the centreline and alignment of the Abbotsham Road carriageway should enable HGVs to safely manoeuvre from and to the A39.

5.10.145 The movement of construction vehicles would be controlled by the final version of the CTMP(s) to ensure they travel in a safe and efficient manner. As part of the industry's Considerate Constructors Scheme, which all reputable contractors are signed up to and which seeks to raise standards within the

industry (contractors who are not signed up to the scheme fail to progress in similar construction contractor procurements), contractors have responsibilities relating to the safe and efficient movement of their associated and related vehicle movements, including arrangements for deliveries.

5.10.146 All construction HGVs will be routeing through the study area under strict traffic management control via the final version of the CTMP(s) and warning signage will be used where relevant, for example at accesses to construction compounds, to alert other drivers of the construction traffic.

5.10.147 With specific reference to the A386 / Old Bideford Bridge / Bridge Street mini roundabout junction and the section of the A386 adjacent to Jubilee Square both within Bideford, the final version of the CTMP(s) will manage construction traffic in these locations such that construction traffic must avoid the busy school drop off and pick up times.

5.10.148 Overall, the impact of construction traffic on road safety is predicted to be of local spatial extent and short-term duration. The magnitude is therefore **low**.

Significance of the Effect

5.10.149 For the sections of the A39 including Torridge Bridge, the junction with the B3233 and Heywood Roundabout, the magnitude of impact is **low** and the sensitivity of the receptor is **low**. The effect will, therefore, be of a **negligible** adverse significance, which is not significant.

5.10.150 For the section of the A386 through Bideford, the magnitude of impact is **low** and the sensitivity of the receptor is **high**. The effect, therefore, will be of a **minor** adverse significance, which is not significant.

5.10.151 For the section of Gammaton Road between Manteo Way and the access to TCC5, the magnitude of impact is **low** and the sensitivity of the receptor is **negligible**. The effect will, therefore, be of a **negligible** adverse significance, which is not significant.

5.10.152 For the section of the B3236 between the A39 and the access to TCC1 at Cornborough Sewage Treatment Works, the magnitude of impact is **low** and the sensitivity of the receptor is **low**. The effect will, therefore, be of a **negligible** adverse significance, which is not significant.

5.10.153 For the section of Abbotsham Road between the A39 and the access to TCC3, the magnitude of impact is **low** and the sensitivity of the receptor is **negligible**. The effect will, therefore, be of a **negligible** adverse significance, which is not significant.

The Impact of AILs

5.10.154 AILs will be required during the construction phase of the Proposed Development to transport cable drums to the construction compounds and transformers to the Converter Site.

5.10.155 These movements will be irregular throughout the study area and not just the five highway links of the traffic and transport study area to be considered for assessment as part of the EIA. The assessment relating to AILs is therefore considered across the whole study area.

Sensitivity of the Receptor

5.10.156 The access routes to be used by AILs will be of a standard that safely accommodates the movement of these vehicles. The route must be of a standard to safely accommodate the AILs to ensure the heavy haulage company's insurance is valid.

5.10.157 Any restrictions along the routes would also necessarily be removed to accommodate the transport delivery vehicles and they would travel under controlled environments. This will be set out within the Special Order (**Table 5.24**).

5.10.158 Given the controlled environment, the sensitivity of the receptor is **negligible**.

Magnitude of Impact

5.10.159 Depending on the width, length or weight of the vehicle, different notice periods have to be provided to highway authorities, bridge authorities and the police. These can vary between two and five days. The following activities will need to be undertaken in accordance with the Road Vehicles (Authorisation of Special Types) Order 2003 (STGO):

- Before the start of any journey, notify in accordance with Schedule 5 the chief office of police for each area in which the vehicle or vehicle-combination is to be used;
- Ensure that the vehicle or vehicle-combination is used in accordance with the requirements of that Schedule; and
- Ensure that the vehicle or vehicle-combination is accompanied during the journey by one or more attendants employed in accordance with Schedule 6.

5.10.160 The number of AIL movements will be low and each load will be present on the highway network for a short period of time, with standard measures (including traffic management measures) applied in terms of route, timing and method of delivery to minimise delays to other highway users. The police will be notified of all AIL movements and will give prior notification given to the locality via local newspapers/radio etc so that other users have advance notification and can avoid or re-time their journeys to negate any impact.

5.10.161 AILs will also be under escort, as directed by the local police authority or as voluntary provided by the heavy haulage contractor, with those delivering transformers being under police escort. Escorts will not only control the AILs but will also interact with other road users to control, guide and protect them accordingly so as to safeguard their safe and expedient passage. This includes not just other vehicles but also non-motorised users and those who simply wish to watch/observe the movement of the AILs transporting the larger transformers from the roadside.

5.10.162 Based upon the above, the impact of AILs on the safety of highway users is predicted to be of local spatial extent and short term duration. The magnitude is therefore **negligible**.

Significance of the Effect

5.10.163 Overall, the magnitude of the impact is **negligible** and the sensitivity of the receptor is **negligible**. The effect will, therefore, be of a **negligible** adverse significance, which is not significant.

5.11 Cumulative Environmental Assessment

5.11.1 The CEA takes into account the impact associated with the Proposed Development together with other projects and plans. The projects and plans selected as relevant to the CEA presented within this chapter are based upon the results of a screening exercise (see Volume 1, Appendix 5.3: CEA Screening Matrix) up to 8 July 2024.

5.11.2 The CEA presented within this chapter considers all cumulative developments which could generate material volumes of traffic within the study area during construction of the Proposed Development and has accounted for those developments accordingly, either by way of the application of traffic growth rates from the DfT National Trip End Model or by adding estimated traffic flows as set out in relevant documents accompanying the planning application onto highway links within the study area.

5.11.3 Each project has been considered on a case-by-case basis for screening in or out of this chapter's assessment based upon data confidence, effect-receptor pathways and the spatial/temporal scales involved.

5.11.4 The traffic and transport CEA methodology has followed the methodology set out in Volume 1, Chapter 5: EIA Methodology of the ES. As part of the assessment, all projects and plans considered alongside the Proposed Development have been allocated into 'tiers' reflecting their current stage within the planning and development process.

- Tier 1
  - Under construction
  - Permitted application
  - Submitted application
  - Those currently operational that were not operational when baseline data were collected, and/or those that are operational but have an ongoing impact
- Tier 2
  - Scoping report has been submitted
- Tier 3
  - Scoping report has not been submitted
  - Identified in the relevant Development Plan
  - Identified in other plans and programmes.

5.11.5 This tiered approach is adopted to provide a clear assessment of the Proposed Development alongside other projects, plans and activities.

5.11.6 The CEA also considers the Proposed Development and the anticipated National Grid Electricity Transmission (NGET) substation (which will be

implemented by NGET and thus, does not form part of the Proposed Development) together. This is because the NGET substation will be required for the connection of the Proposed Development to the national grid.

5.11.7 The specific projects, plans and activities scoped into the CEA, are outlined in **Table 5.44** and are identified as those developments that would generate a material volume of traffic within the study area at the time of the peak construction traffic flows in 2028. The traffic generated by projects, plans and activities allocated within adopted local plans, including BID03: Land Adjoining Manteo Way and BID04: Site South of East-the-Water of the 'North Devon and Torridge Local Plan 2011-2031', are considered in the application of traffic growth rates from the DfT National Trip End Model as part of the CEA. The locations of such projects, plans and activities are presented on Volume 2, Figure 5.9 of the ES.

Table 5.44: List of cumulative developments considered within the CEA

Project	Status	Distance from Proposed Development (nearest point, km)	Description	Dates of Construction (if available)	Dates of Operation (if available)	Overlap with the Proposed Development?
Tier 1						
Land To The South Of Clovelly Road	Application Permitted	Adjacent to the order limits	Reserved matters application for details of appearance, landscaping, layout and scale in respect of a proposal for 274 no. dwellings, associated infrastructure and open space pursuant outline planning permission 1/0039/2014/OUTM (Amended Plans)	Assumed 2025/ - 2030	Assumed 2030 onwards	Yes
Land To The South Of Clovelly Road, Bideford	Application Permitted	0.1	Reserved matters application for details of appearance, landscaping, layout and scale in respect of a proposal for 276 no. dwellings, associated infrastructure and open space pursuant outline planning permission 1/0039/2014/OUTM (Amended Plans)	Assumed 2025 - 2030	Assumed 2030 onwards	Yes
Land At Grid Reference 246891 126041, Manteo Way, East-The-Water	Submitted (pending approval)	0.1	Erection of building for the provision of vehicle workshop, office & welfare and all ancillary facilities, access and cycle/pedestrian improvements	Construction start and end dates unspecified	Assumed 2028 onwards	Yes

Scope of Cumulative Effects Assessment

5.11.8 The cumulative effects presented and assessed in this section have been based on the Project Design Envelope set out in Volume 1, Chapter 5: Project Description of the ES as well as the information available on other projects and plans. The maximum design scenario as described for the Proposed Development (see **Table 5.25**) has been assessed cumulatively with the projects and plans below in **Table 5.45**.

Table 5.45: Maximum design scenario considered for the assessment of potential effects

Cumulative Effect	Phase[1]			Projects Considered	Justification
	C	O	D		
The impact on driver delay	✓	×	×	Inclusion of all relevant identified cumulative schemes **Tier 1** • Land To The South Of Clovelly Road, Bideford (Phase 1) • Land To The South Of Clovelly Road, Bideford (Phase 2) • Land At Grid Reference 246891 126041, Manteo Way East-The-Water **Tier 2** • No schemes identified. **Tier 3** • NGET substation (Alverdiscott Substation Connection Development)	The greatest impact (Maximum Design Scenario) from the CEA will occur when all relevant cumulative schemes are considered in the assessment. .
The impact on severance	✓	×	×		
The impact on non-motorised user delay	✓	×	×		
The impact on non-motorised user amenity and fear and intimidation	✓	×	×		
The impact on road safety	✓	×	×		

5.11.9 The CEA has considered the Proposed Development, alongside the NGET substation to be developed at the existing Alverdiscott Substation Site. The assessed design of NGET substation has been based upon a combination of reasonable worst-case parameters, as detailed within Volume 1, Chapter 3: Project Description of the ES. The development area for the NGET substation would comprise up to 3.8 ha of land. Within that area, it is assumed that the substation itself will occupy a footprint of approximately 2.8 ha, with a maximum height of 15 m, excluding connecting tower structures. The assessment has assumed the NGET substation would generate 50 two-way HGV movements and 200 two-way construction staff movements per day.

5.11.10 If further information is available for the proposal before the Proposed Development receives development consent, the Applicant will review the information and provide any update needed to the CEA.

Cumulative Effects Assessment

5.11.11 The estimated traffic generation from the cumulative developments have been taken from the respective transport document submissions and are replicated in Volume 2, Appendix 5.4: Assessment Calculations.

5.11.12 In accordance with the IEMA guidelines, the cumulative vehicle movements, which include the peak daily construction vehicle movements generated by the construction phase of the Proposed Development, are assessed against the 2028 future baseline traffic flows, as set out in **Table 5.45**.

Table 5.46: Impact of cumulative development traffic flows

Highway link	2028 Base traffic flows		Cumulative development traffic flows		% increase	
	Total vehicles	HGVs	Total vehicles	HGVs	Total vehicles	HGVs
Link 1: A39 between Lake Roundabout and Roundswell Roundabout	33,805	1,031	1,046	305	3.1%	29.6%
Link 2: A39 between Roundswell Roundabout and B3233	21,377	760	896	255	4.2%	33.5%
Link 3: A39 between B3233 and Heywood Road Roundabout	25,001	861	896	255	3.6%	29.6%
Link 4: A39 between Heywood Road Roundabout and B3236 Buckleigh Road	16,229	521	900	255	5.5%	48.9%
Link 5: A39 between B3236 Buckleigh Road and Abbotsham Cross Roundabout	14,782	427	904	255	6.1%	59.7%
Link 6: A39 between Abbotsham Cross Roundabout and Fairy Cross	7,725	243	332	255	4.3%	105.0%
Link 7: B3233 Barnstaple Street between Barnstaple Street Roundabout and Manteo Way	12,180	487	680	141	5.6%	29.0%

Highway link	2028 Base traffic flows		Cumulative development traffic flows		% increase	
	Total vehicles	HGVs	Total vehicles	HGVs	Total vehicles	HGVs
Link 8: Manteo Way between Barnstaple Street and Gammaton Road	8,616	295	689	141	8.0%	47.7%
Link 9: Gammaton Road between Manteo Way and Tennacott Lane	833	10	548	77	65.8%	737.1%
Link 10: Gammaton Road between Tennacott Lane and Moorview House	833	10	0	0	0.0%	0.0%
Link 11: Gammaton Moor Road between Moorview House and Alverdiscott Substation access	91	5	0	0	0.0%	0.0%
Link 12: A386 between Heywood Road Roundabout and The Quay	4,656	67	0	0	0.0%	0.0%
Link 13: A386 between Heywood Road Roundabout and Ford Rise	14,231	481	39	35	0.3%	7.3%
Link 14: A386 between Ford Rise and Wesleyan Chapel	9,850	324	39	35	0.4%	10.8%
Link 15: B3236 Buckleigh Road between A39 and Pusehill Road	2,015	21	39	35	1.9%	165.9%
Link 16: Bowood Farm Road between Abbotsham Cross Roundabout and Temporary Construction Compound Access 2	1,634	36	647	35	39.6%	97.9%
Link 17: Littleham Road between Abbotsham Cross Roundabout and Temporary Construction Compound Access 3	1,869	110	39	35	2.1%	31.7%

5.11.13 The cumulative impacts on all highway links within the study area are the same as those assessed for the Proposed Development, plus Link 2, Link 4, Link 5, Link 6 and Link 8.

5.11.14 In terms of total vehicle movements, no highway links are predicted to exceed the respective Rule 1 and Rule 2 thresholds, as defined in the IEMA guidelines set out in **section 5.6** of this ES chapter.

5.11.15 In terms of HGV movements, Link 2, Link 4, Link 5, Link 6 and Link 8 are predicted to exceed the respective Rule 1 threshold as defined in the IEMA guidelines set out in **section 5.6** of this ES chapter. No highway links are predicted to exceed the respective Rule 2 threshold.

5.11.16 On this basis, the assessments undertaken in **section 5.10** of this ES chapter cover the CEA for all highway links, except for Link 2, Link 4, Link 5, Link 6 and Link 8. A CEA has therefore been undertaken for Link 2, Link 4, Link 5, Link 6

and Link 8. A description of the likely effect on receptors caused by each identified impact is given in **Table 5.47** below.

Table 5.47: Highway links for CEA

Highway link	Sensitivity	Change in daily traffic flow		IEMA rule
		Total vehicles	HGVs	
Link 2: A39 between Roundswell Roundabout and B3233	Low	4.2%	33.5%	Rule 1
Link 4: A39 between Heywood Road Roundabout and B3236 Buckleigh Road	Negligible	5.5%	48.9%	Rule 1
Link 5: A39 between B3236 Buckleigh Road and Abbotsham Cross Roundabout	Low	6.1%	59.7%	Rule 1
Link 6: A39 between Abbotsham Cross Roundabout and Fairy Cross	Low	4.3%	105.0%	Rule 1
Link 8: Manteo Way between Barnstaple Street and Gammaton Road	Low	8.0%	47.7%	Rule 1

5.11.17 A description of the significance of cumulative effects upon traffic and transport receptors within the study area as a result of cumulative developments is set out below.

The Impact on Driver Delay

5.11.18 The extent of assessment for driver delay from the cumulative developments is considered along the A39 and Barnstaple Street / Manteo Way T-junction, with a review of the change in the operation of junctions or highway links during the weekday peak hour periods when the baseline traffic flows are at their highest.

Sensitivity of the Receptor

Barnstaple Street / Manteo Way T-Junction

5.11.19 The Barnstaple Street / Manteo Way T-junction (Link 8) experiences congestion during highway network peak hours as traffic flow along Barnstaple Street prevents vehicles from turning both left and right from Manteo Way onto Barnstaple Street, resulting in queuing along Manteo Way back from the give-way line. The sensitivity of the receptor is **high**.

A39

5.11.20 The assessment considers the peak hours and daily variation of traffic along the section of the A39 within the study area (Link 1, Link 2, Link 3, Link 4, Link 5 and Link 6) and therefore through both Heywood Road Roundabout and Abbotsham Cross Roundabout. The sensitivity of the receptor is **low**.

Magnitude of Impact

Barnstaple Street / Manteo Way T-Junction

5.11.21 To consider the impact of cumulative developments on the operation of the Barnstaple Street / Manteo Way T-junction (Link 8), an assessment of the junction using PICADY was undertaken.

5.11.22 The transport submission documents for the cumulative developments indicate that an additional 7 vehicle movements would be made through the junction from Barnstaple Street southbound onto Manteo Way in the AM peak (08:00-09:00), with no additional vehicle movements in the PM peak (15:45-16:45).

5.11.23 The results of the PICADY modelling with the additional 7 vehicle movements through the junction in the AM peak is set out in **Table 5.48**, with the full modelling output included in Volume 2, Appendix 5.5: Junctions 10 Modelling Output. There would be no cumulative traffic through the junction in the PM peak and therefore, the results of the PICADY modelling for the PM peak would be the same as those set out in **Table 5.32**.

Table 5.48: PICADY modelling of Barnstaple Street / Manteo Way T-junction with cumulative development traffic flows

2028 Future Baseline				
	AM Peak (08:00-09:00)			
	95% Queue (Veh)	Delay (s)	RFC	Junction Delay (s)
Manteo Way to Barnstaple Street (south)	17.4	85.50	0.87	29.08
Manteo Way to Barnstaple Street (north)	31.7	88.84	0.92	
Barnstaple Street (south) to Manteo Way	1.2	9.33	0.26	
2028 Future Baseline + Cumulative Development				
	AM Peak (08:00-09:00)			
	95% Queue (Veh)	Delay (s)	RFC	Junction Delay (s)
Manteo Way to Barnstaple Street (south)	19.2	102.95	0.92	31.50
Manteo Way to Barnstaple Street (north)	32.7	92.98	0.92	
Barnstaple Street (south) to Manteo Way	1.3	9.49	0.26	

5.11.24 As set out in **Table 5.48**, the PICADY modelling indicates that with the addition of cumulative developments in the 2028 future baseline scenario, the Barnstaple Street / Manteo Way T-junction would operate with a maximum RFC value of 0.92 in the AM peak hour, with an overall maximum junction delay of 32 seconds and a maximum delay of 103 seconds for drivers turning right onto Barnstaple Street from Manteo Way.

5.11.25 These modelling results therefore suggest that the junction would continue to operate at capacity in the 2028 future baseline scenario with the addition of cumulative developments, with no noticeable change in delay for drivers turning right onto Barnstaple Street from Manteo Way. The magnitude is therefore **low**.

A39

5.11.26 To consider the impact of the cumulative developments on the operation of the A39 (Link 1, Link 2, Link 3, Link 4, Link 5 and Link 6), traffic flows from these cumulative developments have been applied to peak hour 2028 future baseline traffic flows along the A39.

5.11.27 The assessment of the A39 considers the impact of cumulative developments in the observed AM peak hour (08:00-09:00) and PM peak hour (16:00-17:00) in the 2028 future baseline scenario in the context of peak hour variation across the week.

5.11.28 The construction vehicle movement assumptions and calculations set out in Volume 2, Appendix 5.3: Construction Traffic Generation assumes a flat profile of vehicle trips from cumulative developments across the 12-hour working day and therefore, 28 vehicle movements along the A39 each hour between 07:00 and 19:00 hours.

5.11.29 The data obtained from the radar surveys indicate that across the week, the section of the A39 within the study area experiences variations in traffic flow of between 19% and 23% in the AM peak (08:00-09:00) and between 19% and 20% in the PM peak (16:00-17:00).

5.11.30 An additional 28 vehicle movements along the A39 in both the AM peak (08:00-09:00) and PM peak (16:00-17:00) would therefore be within the daily variation in traffic flows. The magnitude is therefore **negligible**.

Significance of the Effect

Barnstaple Street / Manteo Way T-Junction

5.11.31 The magnitude of the impact on driver delay at the Barnstaple Street /Manteo Way T-junction is **low** and the sensitivity of the receptor is **high**. The effect will, therefore, be of a **minor** adverse significance, which is not significant.

A39

5.11.32 The magnitude of the impact on driver delay along the A39 within the study area is **negligible** and the sensitivity of the receptor is **low**. The effect will, therefore, be of a **negligible** adverse significance, which is not significant.

The Impact on Severance

5.11.33 The changes in total traffic flow as a result of the cumulative developments on all five highway links (Link 2, Link 4, Link 5, Link 6 and Link 8) are all lower than the 30% required for a slight effect to occur, but all five highway links will experience an increase of HGVs by more than 30% across the day.

A39 between Roundswell Roundabout and B3233 (Link 2)

Sensitivity of the Receptor

5.11.34 There is a small area of residential development and some employment to the north of the A39 to the west of Roundswell Roundabout, with suitable infrastructure such as bridges to enable people to cross over the A39. The sensitivity of the receptor is **low**.

Magnitude of Impact

5.11.35 The change in traffic flow along Link 2 as a result of cumulative developments will be an increase of 4%. This impact is predicted to be of local spatial extent and short-term duration. The magnitude is therefore **negligible**.

Significance of the Effect

5.11.36 Overall, the magnitude of the impact is **negligible** and the sensitivity of the receptor is **low**. The effect will, therefore, be of a **negligible** adverse significance, which is not significant.

A39 between Heywood Road Roundabout and B3236 Buckleigh Road (Link 4)

Sensitivity of the Receptor

5.11.37 There are no sensitive receptors along this section of the A39 and no reason to cross the carriageway. The sensitivity of the receptor is **negligible**.

Magnitude of Impact

5.11.38 The change in traffic flow along Link 4 as a result of cumulative developments will be an increase of 6%. This impact is predicted to be of local spatial extent and short-term duration. The magnitude is therefore **negligible**.

Significance of the Effect

5.11.39 Overall, the magnitude of the impact is **negligible** and the sensitivity of the receptor is **negligible.** The effect will, therefore, be of a **negligible** adverse significance, which is not significant.

A39 between B3236 Buckleigh Road and Abbotsham Cross Roundabout (Link 5)

Sensitivity of the Receptor

5.11.40 There is an outdoor adventure site and brewery to the north and a hotel to the south of the A39, with other sections of the local highway network running underneath the A39. The sensitivity of the receptor is **low**.

Magnitude of Impact

5.11.41 The change in traffic flow along Link 5 as a result of cumulative developments will be an increase of 6%. This impact is predicted to be of local spatial extent and short-term duration. The magnitude is therefore **negligible**.

Significance of the Effect

5.11.42 Overall, the magnitude of the impact is **negligible** and the sensitivity of the receptor is **low**. The effect will, therefore, be of a **negligible** adverse significance, which is not significant.

A39 between Abbotsham Cross Roundabout and Fairy Cross (Link 6)

Sensitivity of the Receptor

5.11.43 There is a small group of dwellings fronting the carriageway in Fairy Cross with other residential development set back the other side of the A39. The sensitivity of the receptor is **low**.

Magnitude of Impact

5.11.44 The change in traffic flow along Link 6 as a result of cumulative developments will be an increase of 4%. The impact is predicted to be of local spatial extent and short-term duration. The magnitude is therefore **negligible**.

Significance of the Effect

5.11.45 Overall, the magnitude of the impact is **negligible** and the sensitivity of the receptor is **low**. The effect will, therefore, be of a **negligible** adverse significance, which is not significant.

Manteo Way between Barnstaple Street and Gammaton Road (Link 8)

Sensitivity of the Receptor

5.11.46 There are some concentrations of both residential and employment areas either side of the carriageway. A wide footway and shared footway/cycleway adjacent

to the carriageway which has a 30 mph speed limit and adequate crossing facilities. The sensitivity of the receptor is **high**.

Magnitude of Impact

5.11.47 The change in traffic flow along Link 8 as a result of cumulative developments will be an increase of 8%. The impact is predicted to be of local spatial extent and short-term duration. The magnitude is therefore **negligible**.

Significance of the Effect

5.11.48 Overall, the magnitude of the impact is **negligible** and the sensitivity of the receptor is **high**. The effect will, therefore, be of a **minor** adverse significance, which is not significant.

The Impact on Non-Motorised User Delay

5.11.49 To consider the potential for pedestrian and non-motorised user delay to occur on each of the five highway links, the maximum peak hour base traffic flows, along with the addition of cumulative development traffic flows, has been considered.

A39 between Roundswell Roundabout and B3233 (Link 2)

Sensitivity of the Receptor

5.11.50 The A39 is a principal highway route with a 60mph speed limit. Link 2 has no footway provision and no at-grade crossing facilities as there is negligible pedestrian and non-motorised user demand along the route. The sensitivity of the receptor is **low**.

Magnitude of Impact

5.11.51 It is predicted that in 2028, Link 2 will have a base hourly traffic flow of 891 vehicles and an hourly traffic flow of 928 vehicles with cumulative development traffic. This is lower than the 1,400 vehicles per hour whereby non-motorised user delay will be perceptible. The impact is predicted to be of local spatial extent and short-term duration. The magnitude is therefore **negligible**.

Significance of the Effect

5.11.52 Overall, the magnitude of the impact is **negligible** and the sensitivity of the receptor is **low**. The effect will, therefore, be of a **negligible** adverse significance, which is not significant.

A39 between Heywood Road Roundabout and B3236 Buckleigh Road (Link 4)

Sensitivity of the Receptor

5.11.53 The A39 is a principal highway route with a 60mph speed limit. Most of Link 4 has no footway provision and no at-grade crossing facilities as there is limited pedestrian and non-motorised user demand along the majority of the route. The sensitivity of the receptor is **negligible**.

Magnitude of Impact

5.11.54 It is predicted that in 2028, Link 4 will have a base hourly traffic flow of 676 vehicles and an hourly traffic flow of 714 vehicles with cumulative development traffic. This is lower than the 1,400 vehicles per hour whereby non-motorised user delay will be perceptible. The impact is predicted to be of local spatial extent and short-term duration. The magnitude is therefore **negligible**.

Significance of the Effect

5.11.55 Overall, the magnitude of the impact is **negligible** and the sensitivity of the receptor is **negligible**. The effect will, therefore, be of a **negligible** adverse significance, which is not significant.

A39 between B3236 Buckleigh Road and Abbotsham Cross Roundabout (Link 5)

Sensitivity of the Receptor

5.11.56 The A39 is a principal highway route with a 60mph speed limit. Link 5 has no footway provision and no at-grade crossing facilities as there is negligible pedestrian and non-motorised user demand along the route. The sensitivity of the receptor is **low**.

Magnitude of Impact

5.11.57 It is predicted that in 2028, Link 5 will have a base hourly traffic flow of 616 vehicles and an hourly traffic flow of 654 vehicles with cumulative development traffic. This is lower than the 1,400 vehicles per hour whereby non-motorised user delay will be perceptible. The impact is predicted to be of local spatial extent and short-term duration. The magnitude is therefore **negligible**.

Significance of the Effect

5.11.58 Overall, the magnitude of the impact is **negligible** and the sensitivity of the receptor is **low**. The effect will, therefore, be of a **negligible** adverse significance, which is not significant.

A39 between Abbotsham Cross Roundabout and Fairy Cross (Link 6)

Sensitivity of the Receptor

5.11.59 The A39 is a principal highway route with a 60mph speed limit. Most of Link 6 has no footway provision and no at-grade crossing facilities as there is limited pedestrian and non-motorised user demand along the majority of the route. A wide footway exists along both sides of the carriageway in Fairy Cross given the small number of dwellings which front the carriageway, although there are no pedestrian crossing facilities along the A39 through the village. The sensitivity of the receptor is **low**.

Magnitude of Impact

5.11.60 It is predicted that in 2028, Link 6 will have a base hourly traffic flow of 322 vehicles and an hourly traffic flow of 336 vehicles with cumulative development traffic. This is lower than the 1,400 vehicles per hour whereby non-motorised user delay will be perceptible. The impact is predicted to be of local spatial extent and short-term duration. The magnitude is therefore **negligible**.

Significance of the Effect

5.11.61 Overall, the magnitude of the impact is **negligible** and the sensitivity of the receptor is **low**. The effect will, therefore, be of a **negligible** adverse significance, which is not significant.

Manteo Way between Barnstaple Street and Gammaton Road (Link 8)

Sensitivity of the Receptor

5.11.62 There are some concentrations of both residential and employment areas either side of the carriageway. A wide footway and shared footway/cycleway adjacent to the carriageway which has a 30 mph speed limit and adequate crossing facilities. The sensitivity of the receptor is **high**.

Magnitude of Impact

5.11.63 It is predicted that in 2028, Link 8 will have a base hourly traffic flow of 359 vehicles and an hourly traffic flow of 388 vehicles with cumulative development traffic. This is lower than the 1,400 vehicles per hour whereby non-motorised user delay will be perceptible. The impact is predicted to be of local spatial extent and short-term duration. The magnitude is therefore **negligible**.

Significance of the Effect

5.11.64 Overall, the magnitude of the impact is **negligible** and the sensitivity of the receptor is **high**. The effect will, therefore, be of a **minor** adverse significance, which is not significant.

The Impact on Non-Motorised User Amenity and Fear and Intimidation

A39 between Roundswell Roundabout and B3233 (Link 2)

Sensitivity of the Receptor

5.11.65 The A39 is a principal highway route with a 60mph speed limit. Link 2 has no footway provision and no at-grade crossing facilities as there is negligible pedestrian and non-motorised user demand along the route. The sensitivity of the receptor is **low**.

Magnitude of Impact

Table 5.49: Degree of hazard and level of fear and intimidation for Link 2 with cumulative development traffic flows

Average traffic flow over 18-hour day – all vehicles/hour	Total 18-hour HGV flow	Posted vehicle speed	Total hazard score	Level of fear and intimidation
2028 base traffic flows				
1,188	760	60	40	Moderate
2028 base traffic flows with cumulative development traffic				
1,237	1,015	60	60	Great

5.11.66 It is predicted that there will be one step change in the level of fear and intimidation along Link 2 as a result of cumulative development traffic, although Link 2 has no footway provision and no at-grade crossing facilities as there is negligible pedestrian and non-motorised user demand along the route. The magnitude is therefore **low**.

Significance of the Effect

5.11.67 Overall, the magnitude of the impact is **low** and the sensitivity of the receptor is **low**. The effect will, therefore, be of a **minor** adverse significance, which is not significant.

A39 between Heywood Road Roundabout and B3236 Buckleigh Road (Link 4)

Sensitivity of the Receptor

5.11.68 The A39 is a principal highway route with a 60mph speed limit. Most of Link 4 has no footway provision and no at-grade crossing facilities as there is limited pedestrian and non-motorised user demand along the majority of the route. The sensitivity of the receptor is **negligible**.

Magnitude of Impact

Table 5.50: Degree of hazard and level of fear and intimidation for Link 4 with cumulative development traffic flows

Average traffic flow over 18-hour day – all vehicles/hour	Total 18-hour HGV flow	Posted vehicle speed	Total hazard score	Level of fear and intimidation
2028 base traffic flows				
902	521	60	40	Moderate
2028 base traffic flows with cumulative development traffic				
952	776	60	40	Moderate

5.11.69 It is predicted that there will be no step change in the level of fear and intimidation along Link 4 as a result of cumulative development traffic. The magnitude is therefore **negligible**.

Significance of the Effect

5.11.70 Overall, the magnitude of the impact is **negligible** and the sensitivity of the receptor is **negligible**. The effect will, therefore, be of a **negligible** adverse significance, which is not significant.

A39 between B3236 Buckleigh Road and Abbotsham Cross Roundabout (Link 5)

Sensitivity of the Receptor

5.11.71 The A39 is a principal highway route with a 60mph speed limit. Link 5 has no footway provision and no at-grade crossing facilities as there is negligible pedestrian and non-motorised user demand along the route. The sensitivity of the receptor is **low**.

Magnitude of Impact

Table 5.51: Degree of hazard and level of fear and intimidation for Link 5 with cumulative development traffic flows

Average traffic flow over 18-hour day – all vehicles/hour	Total 18-hour HGV flow	Posted vehicle speed	Total hazard score	Level of fear and intimidation
2028 base traffic flows				
821	427	60	40	Moderate
2028 base traffic flows with cumulative development traffic				
871	682	60	40	Moderate

5.11.72 It is predicted that there will be no step change in the level of fear and intimidation along Link 5 as a result of cumulative development traffic. The magnitude is therefore **negligible**.

Significance of the Effect

5.11.73 Overall, the magnitude of the impact is **negligible** and the sensitivity of the receptor is **low**. The effect will, therefore, be of a **minor** adverse significance, which is not significant.

A39 between Abbotsham Cross Roundabout and Fairy Cross (Link 6)

Sensitivity of the Receptor

5.11.74 The A39 is a principal highway route with a 60 mph speed limit. Most of Link 6 has no footway provision and no at-grade crossing facilities as there is no/limited non-motorised user demand along the majority of the route. A wide footway exists along both sides of the carriageway in Fairy Cross given the small number of dwellings which front the carriageway, although there are no pedestrian crossing facilities along the A39 through the village. The sensitivity of the receptor is **low**.

Magnitude of Impact

Table 5.52: Degree of hazard and level of fear and intimidation for Link 6 with cumulative development traffic flows

Average traffic flow over 18-hour day – all vehicles/hour	Total 18-hour HGV flow	Posted vehicle speed	Total hazard score	Level of fear and intimidation
2028 base traffic flows				
429	243	60	30	Moderate
2028 base traffic flows with cumulative development traffic				
448	498	60	30	Moderate

5.11.75 It is predicted that there will be no step change in the level of fear and intimidation along Link 6 as a result of cumulative development traffic. The magnitude is therefore **negligible**.

Significance of the Effect

5.11.76 Overall, the magnitude of the impact is **negligible** and the sensitivity of the receptor is **low**. The effect will, therefore, be of a **negligible** adverse significance, which is not significant.

Manteo Way between Barnstaple Street and Gammaton Road (Link 8)

Sensitivity of the Receptor

5.11.77 There are some concentrations of both residential and employment areas either side of the carriageway. A wide footway and shared footway/cycleway adjacent to the carriageway which has a 30 mph speed limit and adequate crossing facilities. The sensitivity of the receptor is **high**.

Magnitude of Impact

Table 5.53: Degree of hazard and level of fear and intimidation for Link 8 with cumulative development traffic flows

Average traffic flow over 18-hour day – all vehicles/hour	Total 18-hour HGV flow	Posted vehicle speed	Total hazard score	Level of fear and intimidation
2028 base traffic flows				
479	295	30	10	Small
2028 base traffic flows with cumulative development traffic				
517	436	30	10	Small

5.11.78 It is predicted that there will be no step change in the level of fear and intimidation along Link 8 as a result of cumulative development traffic. The magnitude is therefore **negligible**.

Significance of the Effect

5.11.79 Overall, the magnitude of the impact is **negligible** and the sensitivity of the receptor is **high**. The effect will, therefore, be of a **minor** adverse significance, which is not significant.

The Impact on Road Safety

5.11.80 The extent of assessment for road safety is considered across the whole study area, from which key locations of the highway network are identified from an analysis of PIA records and advice from highway authorities.

5.11.81 An analysis of PIA records obtained from DCC covering the latest available five-year period between 1 January 2019 and 31 December 2023 has indicated clusters of injury accidents along the A39. No clusters of injury accidents were recorded along Manteo Way.

Sensitivity of the Receptor

5.11.82 The sections of the A39 including the junction with the B3233 and Heywood Roundabout are in Link 2 and Link 4. The sensitivity of the receptor for Link 2 is **low** and for Link 4 is **negligible**.

5.11.83 Manteo Way between Barnstaple Street and Gammaton Road is Link 8. The sensitivity of the receptor for Link 8 is **high**.

Magnitude of Impact

5.11.84 For the A39, the PIA data has indicated no consistent contributory factors to injury accidents within the three clusters along Torridge Bridge, at the junction with the B3233 and at Heywood Roundabout. Given the cumulative developments would have no more than a 6% increase in total traffic flow along the A39, it is concluded that the cumulative developments would not change the injury accident rate along the relevant highway links of the A39 by any noticeable amount.

5.11.85 For Manteo Way, the PIA data has indicated no clusters of injury accidents. Given the cumulative developments would have no more than an 8% increase in total traffic flow along Manteo Way, it is concluded that the cumulative developments would not change the injury accident rate along Manteo Way.

5.11.86 Overall, the impact of cumulative development traffic on road safety is predicted to be of local spatial extent and short-term duration. The magnitude is therefore **low**.

Significance of the Effect

5.11.87 For the sections of the A39 including the junction with the B3233 and Heywood Roundabout, the magnitude of impact is **low** and the sensitivity of the receptor is **negligible** and **low**. The effect will, therefore, be of a **negligible** adverse significance, which is not significant.

5.11.88 For Manteo Way, the magnitude of impact is **low** and the sensitivity of the receptor is **high**. The effect, therefore, will be **minor** adverse significance, which is not significant.

5.12 Transboundary Effects

5.12.1 A screening of transboundary impacts has been carried out and has identified that there was no potential for significant transboundary effects with regard to traffic and transport from the Proposed Development upon the interests of other states.

5.13 Inter-related Effects

5.13.1 Inter-relationships are the impacts and associated effects of different aspects of the Proposed Development on the same receptor. These are as follows.

- Project lifetime effects: Assessment of the scope for effects that occur throughout more than one phase of the Proposed Development (construction, operation and maintenance, and decommissioning), to interact to potentially create a more significant effect on a receptor than if just assessed in isolation in these three phases.
- Receptor led effects: Assessment of the scope for all relevant effects (including inter-relationships between environmental topics) to interact, spatially and temporally, to create inter-related effects on a receptor.

5.13.2 A description of the likely interactive effects arising from the Proposed Development on traffic and transport receptors is provided in Volume 4, Chapter 5: Inter-related effects of the ES.

5.14 Summary of Impacts, Mitigation Measures and Monitoring

5.14.1 Information on traffic and transport within the study area was collected through desktop reviews and site surveys.

5.14.2 **Table 5.54** presents a summary of the impacts, measures adopted as part of the Proposed Development and residual effects in respect to traffic and transport. The impacts assessed include:

- Driver delay (including temporary delays to public transport services);
- Severance;
- Non-motorised user delay;
- Non-motorised user amenity and fear and intimidation;
- Road safety; and
- AILs.

5.14.3 Overall, it is concluded that there will be no significant effects arising from the Proposed Development during the construction phase.

5.14.4 **Table 5.55** presents a summary of the cumulative impacts, mitigation measures and residual effects. Overall, it is concluded that there will be no significant cumulative effects from the Proposed Development alongside other projects/plans.

5.14.5 No transboundary impacts have been identified in regard to effects of the Proposed Development.

Table 5.54: Summary of environmental effects

Description of Impact	Phase[a]			Embedded Mitigation	Sensitivity of receptor	Magnitude of impact	Significance of Effect	Further Mitigation	Residual Effect	Proposed Monitoring
	C	O	D							
The impact on driver delay	✓	×	×	See **Table 5.22**	C: negligible to high	C: negligible to low	C: negligible adverse to minor adverse	N/A	C: negligible adverse to minor adverse	CTMP
The impact on severance	✓	×	×	See **Table 5.22**	C: negligible to low	C: negligible	C: negligible adverse to minor adverse	N/A	C: negligible adverse to minor adverse	CTMP
The impact on non-motorised user delay	✓	×	×	See **Table 5.22**	C: negligible to high	C: negligible	C: negligible adverse to minor adverse	N/A	C: negligible adverse to minor adverse	CTMP
The impact on non-motorised user amenity and fear and intimidation	✓	×	×	See **Table 5.22**	C: negligible to high	C: negligible to low	C: negligible adverse to minor adverse	N/A	C: negligible to negligible or minor adverse	CTMP
The impact on road safety	✓	×	×	See **Table 5.22**	C: negligible to high	C: low	C: negligible adverse to minor adverse	N/A	C: negligible adverse to minor adverse	CTMP
The impact of AILs	✓	×	×	See **Table 5.22**	C: negligible	C: negligible	C: negligible adverse	N/A	C: negligible adverse	CTMP

Table 5.55: Summary of cumulative environmental effects

Description of Impact	Phase[a]			Embedded Mitigation	Sensitivity of receptor	Magnitude of impact	Significance of Effect	Further Mitigation	Residual Effect	Proposed Monitoring
	C	O	D							
Tier 1										
The impact on driver delay	✓	×	×	See **Table 5.22**	C: low to high	C: negligible to low	C: negligible adverse to minor adverse	N/A	C: negligible adverse to minor adverse	CTMP
The impact on severance	✓	×	×	See **Table 5.22**	C: negligible to high	C: negligible	C: negligible adverse to minor adverse	N/A	C: negligible adverse to minor adverse	CTMP

Description of Impact	Phase[a]			Embedded Mitigation	Sensitivity of receptor	Magnitude of impact	Significance of Effect	Further Mitigation	Residual Effect	Proposed Monitoring
	C	O	D							
The impact on non-motorised user delay	✓	×	×	See **Table 5.22**	C: negligible to high	C: negligible	C: negligible adverse to minor adverse	N/A	C: negligible adverse to minor adverse	CTMP
The impact on non-motorised user amenity and fear and intimidation	✓	×	×	See **Table 5.22**	C: negligible to high	C: negligible to low	C: negligible adverse to minor adverse	N/A	C: negligible adverse to minor adverse	CTMP
The impact on road safety	✓	×	×	See **Table 5.22**	C: negligible to high	C: low	C: negligible adverse to minor adverse	N/A	C: negligible adverse to minor adverse	CTMP

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