MORGAN AND MORECAMBE OFFSHORE WIND FARMS: TRANSMISSION ASSETS

Environmental Statement

Volume 3, Chapter 7: Traffic and transport

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Glossary

Term	Meaning
400 kV grid connection cables	Cables that will connect the proposed onshore substations to the existing National Grid Penwortham substation.
400 kV grid connection cable corridor	The corridor within which the 400 kV grid connection cables will be located.
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.
Applicants	Morgan Offshore Wind Limited (Morgan OWL) and Morecambe Offshore Windfarm Ltd (Morecambe OWL).
Baseline	The status of the environment without the Transmission Assets in place.
Code of Construction Practice	A document detailing the overarching principles of construction, contractor protocols, construction-related environmental management measures, pollution prevention measures, the selection of appropriate construction techniques and monitoring processes.
Commitment	This term is used interchangeably with mitigation and enhancement measures. The purpose of commitments is to avoid, prevent, reduce or, if possible, offset significant adverse environmental effects. Primary and tertiary commitments are taken into account and embedded within the assessment set out in the ES.
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.
Cumulative Effects	The combined effect of the Transmission Assets in combination with the effects from other proposed developments, on the same receptor or resource.
Development Consent Order	An order made under the Planning Act 2008, as amended, granting development consent.
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.
EIA Scoping Report	A report setting out the proposed scope of the Environmental Impact Assessment process. The Transmission Assets Scoping Report was submitted to The Planning Inspectorate (on behalf of the Secretary of State) for the Morgan and Morecambe Offshore Windfarms Transmission Assets in October 2022.
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.

Term	Meaning
Evidence Plan Process	A voluntary consultation process with specialist stakeholders to agree the approach to, and information to support, the EIA and Habitats Regulations Assessment processes for certain topics.
Expert Working Group	A forum for targeted engagement with regulators and interested stakeholders through the Evidence Plan Process.
Generation Assets	The generation assets associated with the Morgan Offshore Wind Project and the Morecambe Offshore Windfarm include the offshore wind turbines, inter-array cables, offshore substation platforms and platform link (interconnector) cables to connect offshore substations.
Heavy Goods Vehicle	A lorry with a gross weight exceeding 7.5 tonnes.
Heavy Vehicle	A vehicle with a gross weight exceeding 7.5 tonnes.
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	Inter-related effects arise where an impact acts on a receptor repeatedly over time to produce a potential additive effect or where a number of separate impacts, such as noise and habitat loss, affect a single receptor.
Intertidal Infrastructure Area	The temporary and permanent areas between MLWS and MHWS.
Landfall	The area in which the offshore export cables make landfall (come on shore) and the transitional area between the offshore cabling and the onshore cabling. This term applies to the entire landfall area at Lytham St. Annes between Mean Low Water Springs and the transition joint bays inclusive of all construction works, including the offshore and onshore cable routes, intertidal working area 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.
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 Transmission Assets.
Mean High Water Springs	The height of mean high water during spring tides in a year.
Mitigation measures	This term is used interchangeably with Commitments. The purpose of such measures is to avoid, prevent, reduce or, if possible, offset significant adverse environmental effects.
Morgan and Morecambe Offshore Wind Farms: Transmission Assets	The offshore and onshore infrastructure connecting the Morgan Offshore Wind Project and the Morecambe Offshore Windfarm to the national grid. This includes the offshore export cables, landfall site, onshore export cables, onshore substations, 400 kV grid connection cables and associated grid connection infrastructure such as circuit breaker compounds. Also referred to in this report as the Transmission Assets, for ease of reading.
Non-motorised user amenity	Broadly defined as the relative pleasantness of a journey.
Non-motorised user delay	The delay incurred to a journey by non-motorised users.
Onshore export cables	The cables which would bring electricity from the landfall to the onshore substations.

Term	Meaning
Onshore Infrastructure Area	The area within the Transmission Assets Order Limits landward of Mean High Water Springs. Comprising the offshore export cables from Mean High Water Springs to the transition joint bays, onshore export cables, onshore substations and 400 kV grid connection cables , and associated temporary and permanent infrastructure including temporary and permanent compound areas and accesses. Those parts of the Transmission Assets Order Limits proposed only for ecological mitigation/biodiversity benefit are excluded from this area.
Onshore substations	The onshore substations will include a substation for the Morgan Offshore Wind Project: Transmission Assets and a substation for the Morecambe Offshore Windfarm: Transmission Assets. These will each comprise a compound containing the electrical components for transforming the power supplied from the generation assets to 400 kV and to adjust the power quality and power factor, as required to meet the UK Grid Code for supply to the National Grid.
Personal Injury Accident	An accident that results in personal injury occurring on the public highway (including footways) in which at least one road vehicle was involved.
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.
Scoping Opinion	Sets out the Planning Inspectorate's response (on behalf of the Secretary of State) to the Scoping Report prepared by the Applicants. The Scoping Opinion contains the range of issues that the Planning Inspectorate, in consultation with statutory stakeholders, has identified should be considered within the Environmental Impact Assessment process.
Severance	The perceived division that can occur within a community when it becomes separated by major transport infrastructure. Severance may result from the difficulty of crossing a heavily trafficked road or a physical barrier created by infrastructure..
Study area	This is an area which is defined for each environmental topic which includes the Transmission Assets 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.
Substation	Part of an electrical transmission and distribution system. Substations transform voltage from high to low, or the reverse by means of electrical transformers.
Traffic Flows	Traffic flow describes the number of vehicles passing a reference point per unit of time (e.g., vehicles per hour).
Transboundary effects	Effects from a project within one state that affect the environment of another state(s).
Transmission Assets	See Morgan and Morecambe Offshore Wind Farms: Transmission Assets (above)
Transmission Assets Order Limits	The area within which all components of the Transmission Assets will be located, including areas required on a temporary basis during construction and/or decommissioning

Term	Meaning
Transmission Assets Order Limits: Onshore	The area within which all components of the Transmission Assets landward of Mean High Water Springs will be located, including areas required on a temporary basis during construction and/or decommissioning (such as construction compounds).
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.

Acronyms

Acronym	Meaning
AILs	Abnormal Indivisible Loads
ATC	Automatic Traffic Counter
CoCP	Code of Construction Practice
CTMP	Construction Traffic Management Plan
DCO	Development Consent Order
DECC	Department of Energy and Climate Change
DfT	Department for Transport
DMRB	Design Manual for Roads and Bridges
EIA	Environmental Impact Assessment
ES	Environmental Statement
EWG	Expert Working Group
HDD	Horizontal Directional Drilling
HGV	Heavy Goods Vehicle
HV	Heavy Vehicle
IEMA	Institute for Environmental Management and Assessment
LCC	Lancashire County Council
LRN	Local Road Network
MCC	Manual Classified Count
MHWS	Mean High Water Springs
NCN	National Cycle Network
NPPF	National Planning Policy Framework
NPS	National Policy Statement

Acronym	Meaning
NSIP	Nationally Significant Infrastructure Project
OCTMP	Outline Construction Traffic Management Plan
OHAMP	Outline Highway Access Management Plan
PEIR	Preliminary Environmental Information Report
PIA	Personal Injury Accident
PPG	Planning Practice Guidance
PRoW	Public Right of Way
PWD	Preston Western Distributor
SRN	Strategic Road Network
TA	Transport Assessment
WCHAR	Walking, cycling and horse-riding assessment and reviews

Units

Unit	Description
km	Kilometres
nm	Nautical mile
m	Metre
m^2	Square Metre
s	Seconds
%	Percentage

7 Traffic and transport

7.1 Introduction

7.1.1 Overview

7.1.1.1 This chapter of the Environmental Statement (ES) presents the findings of the Environmental Impact Assessment (EIA) undertaken for the Morgan and Morecambe Offshore Wind Farms: Transmission Assets. For ease of reference, the Morgan and Morecambe Offshore Wind Farms Transmission Assets are referred to in this chapter as the 'Transmission Assets'. This ES accompanies the application to the Planning Inspectorate for development consent for the Transmission Assets.

7.1.1.2 The purpose of the Transmission Assets is to connect the Morgan Offshore Wind Project: Generation Assets and Morecambe Offshore Windfarm: Generation Assets (referred to collectively as the 'Generation Assets') to the National Grid. A description of the Transmission Assets can be found in Volume 1, Chapter 3: Project description of the ES.

7.1.1.3 This chapter of the ES considers the likely impacts and effects of the Transmission Assets on traffic and transport receptors during the construction phase. Specifically, it relates to the onshore and intertidal elements of the Transmission Assets landward of Mean Low Water Springs (MLWS). The likely impacts and effects of the Transmission Assets on traffic and transport receptors during the operation and maintenance, and decommissioning phases and the offshore elements of the Transmission Assets are scoped out as set out in **section 7.11**.

7.1.1.4 In particular, this 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 and sets out the existing and future environmental baseline conditions established from desk studies, surveys and consultation;
- identifies the scope of the assessment;
- 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 for the impact assessment;
- identifies the impact assessment methodology and presents an assessment of the likely impacts and effects in relation to the construction phase of the onshore and intertidal elements of the

Transmission Assets on traffic and transport (and, where relevant, the impacts and effects of traffic and transport on the onshore and intertidal elements of the Transmission Assets); and

- identifies any cumulative, transboundary and/or inter-related effects in relation to the construction phase of the Transmission Assets on traffic and transport receptors.

7.1.1.5 This chapter of the ES also integrates the contents of a 'Transport Assessment' (TA) to consider the impacts and effects on the operation of the highway network arising from the onshore and intertidal elements of the Transmission Assets.

7.1.1.6 An Outline Construction Traffic Management Plan (OCTMP) (document reference J5) and an Outline Highway Access Management Plan (OHAMP) (document reference J8) have been provided as part of the application for development consent.

7.1.1.7 This chapter also draws upon additional information to support the assessment contained within the following annexes.

- Volume 3, Annex 7.1: Alternative methodology for baseline traffic flows.
- Volume 3, Annex 7.2: Traffic survey data.
- Volume 3, Annex 7.3: Description of network links and sensitivity.
- Volume 3, Annex 7.4: Base traffic flows.
- Volume 3, Annex 7.5: Construction trip generation assumptions.
- Volume 3, Annex 7.6: Traffic flows with construction traffic.

7.2 Legislation, policy and guidance

7.2.1 Legislation

7.2.1.1 This section identifies the legislation and policy context for traffic and transport that has been taken into account for the assessment. Legislation relevant to traffic and transport includes the Transport Act 2000, New Roads and Street Works Act 1991, Traffic Management Act 2004, Road Traffic Regulation Act 1984, the Highways Act 1980 and the Infrastructure Act 2015.

7.2.1.2 The Transport Act 2000 contains 'measures to create a more integrated transport system'. Specific measures include requirements to reduce road congestion and pollution. For example, local transport authorities should produce a local transport plan every five years and keep that plan under review. These plans have been considered in the assessment of traffic and transport, as set out in **Table 7.3**.

7.2.1.3 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.

7.2.1.4 The Traffic Management Act 2004 sets out how road networks should be managed by local authorities and includes regulations for roadworks. The Road Traffic Regulation Act 1984 provides powers to regulate or restrict traffic on roads in Great Britain, in the interest of safety.

7.2.1.5 The Highways Act 1980 sets out the duties of the highway authorities and how the highway network will be managed and operated. Part VA covers EIA, which is relevant to this chapter. In addition, the Infrastructure Act 2015 defines the role of National Highways as a government-owned company responsible for ensuring improvements to the strategic road network.

7.2.2 Planning policy context

7.2.2.1 The Transmission Assets will be located in English offshore waters (beyond 12 nautical miles (nm) from the English coast) and inshore waters (within 12 nm from the English coast), with the onshore elements located wholly within England. As set out in Volume 1, Chapter 1: Introduction of the ES, the Secretary of State for the Department for Business, Energy and Industrial Strategy (BEIS) (the department which preceded the Department for Energy Security and Net Zero) has directed that the Transmission Assets are to be treated as development for which development consent is required under section 35 of the Planning Act 2008, as amended.

National Policy Statements

7.2.2.2 There are currently six energy National Policy Statements (NPSs), three of which contain policy relevant to offshore wind development and the Transmission Assets, 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).

7.2.2.3 Although NPS: EN-1, EN-3, and EN-5 all contain policy relevant to offshore wind development, only NPS EN-1 includes guidance on what matters are to be considered in the traffic and transport assessment, thus NPS- EN-3 and EN5 are not considered further within this chapter.

7.2.2.4 **Table 7.1** sets out a summary of the policies within the current NPSs relevant to traffic and transport, which only includes NPS EN-1.

7.2.2.5 The policies within the current NPSs relevant to all topics in the ES can be viewed in the National Policy Statement tracker (document reference J26) and Planning Statement (document reference J28), submitted with the application for development consent.

Table 7.1: Summary of the NPS EN-1 requirements relevant to this chapter

Summary of NPS provision	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) 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)	**Section 7.11** considers all relevant potential transport impacts during the construction phase of the onshore and intertidal elements of the Transmission Assets including disturbance (effects) from traffic and Abnormal Indivisible Loads (AILs). The study area for the assessment of traffic and transport (the study area) has been established to include all relevant routes along the connecting transport network. Noise is considered in Volume 3, Chapter 8: Noise and vibration of the ES. Emissions are considered in Volume 3, Chapter 9: Air quality of the ES and inter-related effects are considered in Volume 3, Chapter 3: Inter-relationships of the ES. Greenhouse gas emissions are considered in Volume 4, Chapter 1: Climate change of the ES.
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 NPS EN-1. (paragraph 5.14.4 of NPS EN-1)	**Section 7.11** provides an analysis of the impacts on traffic and transport receptors during construction of the onshore and intertidal elements of the Transmission Assets and identifies transport impacts and ways to mitigate them. Any mitigation required in relation to traffic and transport has been set out in **section 7.8** of this chapter.
If a project is likely to have significant transport implications, the applicant's Environmental Statement (ES) should include a transport appraisal. The DfT's Transport Analysis Guidance (TAG) and Welsh Governments WelTAG provides guidance on modelling and assessing the impacts. (paragraph 5.14.5 of NPS EN-1)	This chapter of the ES contains an integrated TA throughout to consider the potential impacts and effects on the operation of the highway network arising from the onshore and intertidal elements of the Transmission Assets in accordance with guidance and best practice and relevant parts of the Department for Transport's (DfT) TAG.
National Highways and Highway Authorities are statutory consultees on NSIP applications including energy infrastructure where it is expected to affect the strategic road network and/or have an impact on the local road network. Applicants should consult with National Highways and Highway Authorities as appropriate on the assessment and mitigate to inform the application to be submitted. (paragraph 5.14.6 of NPS EN-1)	National Highways, Lancashire County Council and Blackpool Council as the relevant highway authorities have been consulted on the likely impacts and mitigation relevant to the Strategic Road Network (SRN) and the Local Road Network (LRN) as set out in **section 7.3**.
Where appropriate, 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	**Section 7.6.2** sets out the available public transport and **section 7.6.3** sets out the existing pedestrian and cycling infrastructure within the study area. These highlight the sustainable transport options within the study area.

Summary of NPS provision	How and where considered in the ES
improve access by active, public and shared transport to: • Reduce the need for parking associated with the proposal • Contribute to the decarbonisation of the transport network • Improve user travel options by offering genuine modal choice (paragraph 5.14.7 of NPS EN-1)	Where appropriate, it is expected that movement by sustainable means will be facilitated and encouraged. However, it is noted that the linear nature of the works, the absence of a fixed permanent work site along the cable corridors and the rural nature of parts of the area may make it difficult to implement a standard travel plan. Notwithstanding, travel plan measures have been included within the OCTMP (document reference J5), which is secured by Requirement 9 of the Development Consent Order (DCO) and will promote user travel options as an alternative to driving amongst construction staff, decarbonise the movement of construction staff and seek to reduce the need for parking amongst construction staff. Further details are provided in **section 7.8** (see CoT38).
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)	A transport assessment has been integrated into this chapter of the ES in accordance with guidance, best practice and relevant parts of the DfTs TAG and Section 7.11 provides an assessment of the impacts on the LRN and SRN. No significant effects upon other transport services or infrastructure are anticipated.
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) Where necessary, applicants should discuss with network providers the possibility of co-funding by government for any third-party benefits. Guidance has been issued in England 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 is limited to the provision of several mostly temporary construction accesses along the onshore export cable corridor, the 400 kV grid connection cable corridor and to the onshore substations. Accesses along the onshore export cable corridor and 400 kV grid connection cable corridor will be removed and the land reinstated when construction is finished. Details of commitments made are set out in **Table 7.15**. Details of temporary construction accesses are set out in the OHAMP (document reference J8) is secured by Requirement 10 of the DCO. Further details are provided in **section 7.8** (see CoT23). The accesses to be used for maintenance will be used on a limited and irregular basis. They will not be for public use therefore these considerations do not apply.
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 known peak times; and • reroute to use parts of the network that are less busy.	**Section 7.6.2** sets out the available public transport and **section 7.6.3** sets out the existing pedestrian and cycling infrastructure within the study area. These highlight the sustainable transport options within the study area. Travel plan measures have been included within an OCTMP (document reference J5) secured by Requirement 9 of the DCO. Further details are provided in **section 7.8** (see CoT38).

Summary of NPS provision	How and where considered in the ES
(paragraph 5.14.11 of NPS EN-1)	
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)	There are no commercial ports or commercial freight railway sidings in the vicinity that would allow materials to be viably transported via rail or water. The mitigation adopted considers the routeing of Heavy Goods Vehicle (HGV) movements which do not require the provision of any new inland transport infrastructure apart from temporary access improvements, which would be required irrespective of any modal shift of freight from road to more environmentally sustainable alternatives.
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 proposed accesses have been designed to accommodate the movement of HGVs as set out within the OHAMP (document reference J8), which is secured by Requirement 8 of the DCO. All temporary construction compounds will provide welfare facilities as set out in the OCTMP (document reference J5) secured by Requirement 9 of the DCO. Further details are provided in **section 7.8** (see CoT23 and CoT38).
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 roads, prolonged queuing on approach 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)	HGV routes have been identified and are set out in the OCTMP (document reference J5) secured by Requirement 9 of the DCO, along with associated mitigation measures including the prevention of loading/unloading on the highway and turning/parking provisions. All accesses will provide appropriate geometries and layouts for HGVs to mitigate potential likely significant effects on highways. Further details are provided in **section 7.8** (see CoT23 and CoT38).
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)	As stated in response to paragraph 5.14.12 of NPS EN-1, there will be no new provision of inland transport infrastructure apart from mostly temporary improvements required for construction.
Applicants should consider the DfT policy guidance "Water Preferred Policy Guidelines for	**Section 7.11** considers all relevant potential transport impacts during the construction phase of the onshore and

Summary of NPS provision	How and where considered in the ES
the movement of abnormal indivisible loads" (Highways England, 2012) when preparing their application. (paragraph 5.14.16 of NPS EN-1)	intertidal elements of the Transmission Assets including disturbance (effects) from traffic and AILs. An AIL study that considers the movement of AILs with due regard to the DfT document has identified previous similar delivery locations along the River Ribble, as set out in Volume 3, Annex 7.5: Construction trip generation assumptions of the ES. Depending on the width, length or weight of the laden 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 would need to be undertaken in accordance with the Road Vehicles (Authorisation of Special Types) Order 2003 (STGO) as set out in the document Consents and licenses required under other legislation (document reference J27) submitted as part of the application for development consent.
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 are not expected to make the proposal economically unviable.
A new energy NSIP 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)	**Section 7.11** provides an analysis of the impacts on traffic and transport receptors during construction of the Transmission Assets. **Section 7.8** sets out the mitigation measures adopted, where relevant. The relevant transport impacts during the construction phase take into account mitigation measures documented in the OHAMP (document reference J8) and OCTMP (document reference J5), secured by Requirements 8 and 9 of the DCO. Further details are provided in **section 7.8** (see CoT23 and CoT38). No residual likely significant effects have been identified in **sections 7.11** and **7.13**. The potential transport impacts during the operation, maintenance and decommissioning phases have been scoped out as set out in **Table 7.14**.
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)	**Section 7.11** considers all relevant transport impacts during the construction, operation and maintenance, and decommissioning phases and ways to mitigate them where necessary. The transport impacts arising during those associated with the biodiversity benefit, enhancement and/or mitigation areas, and decommissioning phases have been scoped out as set out in **Table 7.14**. The relevant transport impacts during the construction phase are considered within **section 7.11** and have identified no specific requirements to enter into planning obligations or requirements to be imposed to fund new infrastructure to mitigate any impacts that result in

Summary of NPS provision	How and where considered in the ES
	significant effects. No residual significant effects have been identified and any impacts can be sufficiently mitigated via the OCTMP (document reference J5) and the OHAMP (document reference J8), which are secured by Requirements 8 and 9 of the DCO. Further details are provided in **section 7.8** (see CoT23 and CoT38).
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)	This chapter of the ES considers all relevant transport impacts during the construction, operation and maintenance, and decommissioning phases and ways to mitigate them where necessary. The transport impacts during the operation, maintenance and decommissioning phases have been scoped out as set out in **Table 7.14**. The relevant transport impacts during the construction phase are considered within **section 7.11**, which has not identified any unacceptable impacts on highway safety and that the residual cumulative impacts on the road network would not be severe. The OCTMP (document reference J5) secured by Requirement 9 of the DCO sets out travel plan measures which include demand management measures that will promote active travel and shared travel (car sharing). Further details are provided in **section 7.8** (see CoT38).

The National Planning Policy Framework

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

7.2.2.7 The Government has published proposed reforms to the NPPF 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.

7.2.2.8 **Table 7.2** sets out a summary of the NPPF policies relevant to this chapter of the ES.

Table 7.2: Summary of NPPF requirements relevant to this chapter of the ES

Policy	Key provisions	How and where considered in the ES
108.	Transport issues should be considered from the earliest stages of plan-making and development proposals, so that; a) The potential impacts of development on transport networks can be addressed; […] c) Opportunities to promote walking, cycling and public transport use are identified and pursued; The environmental impacts of traffic and transport infrastructure can be identified, assessed and taken into account – including appropriate opportunities for	**Section 7.11** assesses the impact of construction vehicle movements arising from the onshore and intertidal elements of the Transmission Assets on the LRN and SRN. **Section 7.13** assesses the cumulative impact of traffic and transport on the LRN and SRN. Existing sustainable transport infrastructure is considered within **section 7.6** and at Volume 3, Figures 7.2 to 7.3 and includes an analysis of public transport services and pedestrian and cycle infrastructure.

Policy	Key provisions	How and where considered in the ES
	avoiding and mitigating any adverse effects, and for net environmental gains.	
114.	In assessing sites that may be allocated for development in plans, or specific applications for development, it should be ensured that: a) appropriate opportunities to promote sustainable transport modes can – or have been – taken up, given the type of development and its location; b) safe and suitable access to the site can be achieved for all users; c) the design of streets, parking areas, other transport elements and the content of associated standards reflects current national guidance, including the National Design Guide and the National Model Design Code; and d) 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.	Existing sustainable transport infrastructure is considered within **section 7.6** and at Volume 3, Figures 7.2 to 7.3 and includes an analysis of public transport services and pedestrian and cycle infrastructure. It is noted that the linear nature of the works, the absence of a fixed permanent work site along the onshore export cable corridor and 400 kV grid connection cable corridor and the rural nature of parts of its surroundings may make it difficult to implement a standard travel plan. Travel plan measures, details on staff parking and other relevant transport elements are included within the OCTMP (document reference J5) are secured by Requirement 9 of the DCO. Further details are provided in **section 7.8** (see CoT38). **Section 7.11** assesses access routes and the impact of construction vehicle movements arising from the onshore and intertidal elements of the Transmission Assets on the LRN and SRN. Proposed accesses are set out within the OHAMP (document reference J8) secured by Requirement 8 of the DCO). Further details are provided in **section 7.8** (see CoT23).
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.	**Section 7.11** assesses the impact of construction vehicle movements arising from the onshore and intertidal elements of the Transmission Assets on the LRN and SRN. **Section 7.13** assesses the cumulative impact of traffic and transport on the LRN and SRN. No unacceptable impacts on highway safety or residual severe cumulative impacts on the road network are predicted.
116.	Within this context, applications for development should: […] (d) allow for the efficient delivery of goods, and access by service and emergency vehicles.	Traffic management measures for construction vehicles to allow for efficient deliveries and access are set out in the OCTMP (document reference J5), Proposed accesses with relevant traffic management measures to allow for efficient deliveries and access are set out within the OHAMP (document reference J8). The OCTMP and OHAMP are secured by Requirements 8 and 9 of the DCO. Further details are provided in **section 7.8** (see CoT23 and CoT38).
117.	All development 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	This chapter of the ES contains an integrated transport assessment throughout to consider the potential impacts and effects on the operation of the highway network arising from the onshore and inetrtidal area elements of the Transmission Assets.

Policy	Key provisions	How and where considered in the ES
	the likely impacts of the proposal can be assessed.	Travel plan measures are included within a OCTMP (document reference J5) secured as Requirement 9 of the DCO. Further details are provided in **section 7.8** (see CoT38).

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

Strategic road network and the delivery of sustainable development (DfT Circular 12/2022)

7.2.2.10 The DfT Circular 12/2022 (Department for Transport, 2022) policy paper explains how National Highways will engage with the planning system to assist the delivery of sustainable development whilst maintaining, managing, and operating a safe and efficient SRN.

7.2.2.11 In relation to the assessment of development proposals, it states the following in paragraph 47:

'Where the company is requested to do so, it will engage with local planning authorities and development promoters at the pre-application stage on the scope of transport assessments/statements and travel plans. This process should determine the inputs and methodology relevant to establishing the potential impacts on the SRN and net zero principles that will inform the design and use of the scheme. Development promoters are strongly encouraged to engage with the company to resolve any potential issues and maximise opportunities for walking, wheeling, cycling, public transport and shared travel, as early as possible'.

7.2.2.12 Paragraph 48 relating to TAs states the following:

'Where a transport assessment is required, this should start with a vision of what the development is seeking to achieve and then test a set of scenarios to determine the optimum design and transport infrastructure to realise this vision. Where such development has not been identified in an up-to-date development plan (or an emerging plan that is at an advanced stage[footnote 19]), developers should demonstrate that the development would be located in an area of high accessibility by sustainable transport modes[footnote 20] and would not create a significant constraint to the delivery of any planned improvements to the transport network or allocated sites'.

7.2.2.13 Paragraph 49 continues to state the following:

'A transport assessment for consideration by the company must also consider existing and forecast levels of traffic on the SRN, alongside any additional trips from committed developments that would impact on the same sections (link or junction) as the proposed development. Assumptions underpinning projected levels of traffic should be clearly stated to avoid the default factoring up of baseline traffic. The scenario(s) to be assessed, which depending on the development and local circumstances may include sensitivity testing, should be agreed with the company; where a scenario with

particularly high or low growth is proposed, this should be supported by appropriate evidence'.

7.2.2.14 Paragraph 69 states the following:

'Access to the site for construction, maintenance and de-commissioning should be obtained from the local road network. A direct connection to the SRN will only be permitted in exceptional circumstances'.

7.2.2.15 This chapter of the ES contains an integrated transport assessment throughout with due regard to the SRN and has been prepared in liaison with National Highways as set out in **Table 7.4**.

Local planning policy

7.2.2.16 The onshore and intertidal elements of the Transmission Assets are located within the administrative areas of Fylde Council, Blackpool Council, South Ribble Borough Council and Preston City Council (and Lancashire County Council (LCC) at the county level). The policies of Central Lancashire (formed of South Ribble Borough Council, Preston City Council and Chorley Council) have been considered along with those of West Lancashire Borough Council as a neighbouring authority to the study area.

7.2.2.17 The relevant local planning policies applicable to traffic and transport based on the extent of the study areas for this assessment are summarised in **Table 7.3**.

Table 7.3: Summary of local planning policy relevant to this chapter of the ES

Policy	Key provisions	How and where considered in the ES
LCC Highways and Transport Strategy 2023 – 2025 (2023)		
Priority 1 as part of a framework for highways and transport – Highways asset management.	• Manage our highways assets efficiently and effectively to support connectivity to employment and to essential services.	**Section 7.11** assesses the impact of construction movements on the LRN and SRN. Construction vehicle movements will be effectively distributed in a hierarchical manner using the highest classification of roads over lower classification of roads to reduce congestion as set out in the OCTMP (document reference J5) secured as Requirement 9 of the DCO. Further details are provided in **section 7.8** (see CoT38).
Priority 2 as part of a framework for highways and transport – Network management and safety.	• Improve the efficiency of our urban and rural road networks. • Reduce all road casualties and progress towards zero people killed or seriously injured. • Create safe and social spaces.	**Section 7.11** assesses the impact of construction vehicle movements arising from the onshore and intertidal elements of the Transmission Assets on the LRN and SRN. Construction vehicle movements will be effectively distributed in a hierarchical manner using the highest classification of roads over lower classification of roads to reduce congestion as set out in the OCTMP (document reference J5) secured as Requirement 9 of the DCO. Further details are provided in **section 7.8** (see CoT38). **Section 7.6.5** assesses the current road safety environment along the LRN and SRN.

Policy	Key provisions	How and where considered in the ES
		The impact of construction vehicles generated by the onshore and intertidal elements of the Transmission Assets on road safety is assessed in **section 7.11** and the cumulative impact on road safety is assessed in **section 7.13**.
Priority 3 as part of a framework for highways and transport – Public transport and active travel.	• Support bus and rail services and encourage opportunities to use different forms of transport for single journeys with improved interchanges and better inter-urban and rural community. • Reduce the need to travel by car particularly for shorter journeys.	Existing sustainable transport infrastructure is considered within **section 7.6.6** and Volume 3, Figures 7.2 to 7.3 and includes an analysis of public transport services and pedestrian and cycle infrastructure. Travel plan measures have been included within an OCTMP (document reference J5) secured as Requirement 9 of the DCO. Further details are provided in **section 7.8** (see CoT38).
Priority 4 as part of a framework for highways and transport – Strategic partnerships.	• Facilitate economic growth, regeneration and levelling up.	**Section 7.11** assesses the impact of construction vehicle movements arising from the onshore and intertidal elements of the Transmission Assets on the LRN and SRN.
Central Lancashire Adopted Core Strategy – Local Development Framework (2012)		
Policy 28: Renewable and Low Carbon Energy Schemes.	[…] (c) Any noise, odour, traffic, or other impact of development is mitigated so as not to cause unacceptable detriment to local amenity. (d) Any significant adverse effects of the proposal are considered against the wider environmental, social and economic benefits, including scope for appropriate mitigations, adaptation and/or compensatory provisions.	**Section 7.11** assesses the impact of construction vehicle movements arising from the onshore and intertidal elements of the Transmission Assets on the LRN and SRN. Noise is considered in Volume 3, Chapter 8: Noise and vibration of the ES. No odour effects are predicted to arise from the Transmission Assets (see Volume 1, Chapter 5: Environmental assessment methodology of the ES).
Central Lancashire Highways and Transport Masterplan (2013)		
An Integrated Transport Vision.	We have a vision for highways and transport in Central Lancashire that: • Accepts that we have no choice but to create new highway capacity to support new development and allow us to solve specific problems. But that makes the most of the opportunities this new capacity gives to: • Improve public transport by improving the most important	**Section 7.11** assesses the impact of construction vehicle movements arising from the onshore and intertidal elements of the Transmission Assets on the LRN and SRN and no requirements for any new highway capacity have been identified. Existing sustainable transport infrastructure is considered within **section 7.6.6** and Volume 3, Figures 7.2 to 7.3 and includes an analysis of public transport services and pedestrian and cycle infrastructure. The OCTMP (document reference J5), secured as Requirement 9 of the DCO, sets out travel plan measures which will include

Policy	Key provisions	How and where considered in the ES
	railway stations and bus corridors. • Enhance our public realm to encourage sustainable travel and support economic growth.	demand management measures. Further details are provided in **section 7.8** (see CoT38).
West Lancashire Highways and Transport Masterplan (2014)		
Connected Networks – Strand 2: Highway Route Management.	We will work with partners in neighbouring authorities and with the Highways Agency to put in place a Route Management Plan for West Lancashire that maximises the benefits of all new road construction and highways and transport improvements in the area. The plan will not only look at the engineering suitability of roads for the traffic on them, their road safety record, and the traffic impact on the communities alongside them but will specifically look at impacts on public transport and schools and facilities for young people.	**Section 7.6.4** presents how new and upcoming local road schemes have been considered when defining base traffic flows to assess the traffic and transport impact of the onshore and intertidal elements of the Transmission Assets. **Section 7.6.5** assesses the current road safety environment along the LRN and SRN. The impact of the onshore and intertidal elements of the Transmission Assets on road safety is assessed in **section 7.11** and the cumulative impact on road safety is assessed in **section 7.13**. Existing sustainable transport infrastructure is considered within **section 7.6.6** and Volume 3, Figures 7.2 to 7.3 and includes an analysis of public transport services and pedestrian and cycle infrastructure. **Section 7.11** assesses the impact of construction vehicle movements arising from the onshore and intertidal elements of the Transmission Assets on the LRN and SRN. Travel plan measures including vehicle routeing and construction vehicle management measures have been included within an OCTMP (document reference J5) secured as Requirement 9 of the DCO. Further details are provided in **section 7.8** (see CoT38).
Fylde Coast Highways and Transport Masterplan (2015)		
Key requirement 1.	We need our highway network to operate more efficiently, not just for cars, but also for buses, coaches and for freight.	**Section 7.9.3** sets out how construction vehicles generated by the onshore and intertidal elements of the Transmission Assets have been distributed and assigned to make best use of the LRN and SRN. **Section 7.11** assesses the impact of construction vehicle movements arising from the onshore and intertidal elements of the Transmission Assets on the LRN and SRN. Travel plan measures including vehicle routeing and construction vehicle management measures have been included within an OCTMP (document reference J5) secured as Requirement 9 of the DCO. Further details are provided in **section 7.8** (see CoT38).

Policy	Key provisions	How and where considered in the ES
Key requirement 3.	We need public transport to serve all our communities so that people can get to the jobs and service they need.	Existing sustainable transport infrastructure is considered within **section 7.6.6** and Volume 3, Figures 7.2 to 7.3 and includes an analysis of public transport services and pedestrian and cycle infrastructure.
Adopted Fylde Local Plan to 2032 (incorporating partial review) (2021)		
Strategic Policy INF1 – Service Accessibility and Infrastructure.	For Fylde to protect and create sustainable communities, proposals for development should: a) Make the most of existing infrastructure by focusing on sustainable locations with the best infrastructure capacity. b) Minimise any negative impacts on the quality of the existing infrastructure as a result of new development. f) Where appropriate, demonstrate how access to services will be achieved by means other than by car, and where appropriate, demonstrate how the range of local social and community services and facilities available will be suitable and accessible for the intended occupiers or user(s) of the development.	Existing sustainable transport infrastructure is considered within **section 7.6.6** and Volume 3, Figures 7.2 to 7.3 and includes an analysis of public transport services and pedestrian and cycle infrastructure. **Section 7.11** assesses the impact of construction vehicle movements arising from the onshore and intertidal elements of the Transmission Assets on the LRN and SRN. **Section 7.8** sets out the mitigation measures adopted, where relevant.
Strategic Policy T1 – Strategy Highway Improvements.	Land within Fylde Borough is proposed for part of the route of the Preston Western Distributor Road which will link up to a new Junction 2 on the M55, and the Cottam Link Road. The delivery of the following strategic highway improvements within Fylde will be supported: a) The M55 to Heyhouses (St Annes) Link Road […]	The Preston Western Distributor Road was opened in July 2023 and the M55 to Heyhouses (St Annes) Link Road was opened in June 2024. The effect of these road schemes is included within the base traffic flows and incorporated when assessing the impact of construction vehicle movements arising from the onshore and intertidal elements of the Transmission Assets on the LRN and SRN in **section 7.11**.
Strategic Policy T4 – Enhancing Sustainable Transport Choice.	In order to secure the long-term viability of the Borough and to allow for the increased movement of people and goods expected, the Council will work with neighbouring authorities and transport providers to improve accessibility across the Borough, improve safety and quality of life for residents and reduce the Borough's carbon footprint.	**Section 7.11** assesses the impact of construction vehicle movements arising from the onshore and intertidal elements of the Transmission Assets on the LRN and SRN. This chapter of the ES contains an integrated transport assessment throughout to consider the potential impacts and effects on the operation of the highway network arising from the onshore and intertidal elements of the Transmission Assets in accordance with guidance and best practice.

Policy	Key provisions	How and where considered in the ES
	Over the Local Plan period the Council will work with the Highway Authority (LCC), Highways England, Network Rail, and transport providers to: b) Reduce the environmental impact of transport through suitable mitigation and design. e) Prepare and actively promote travel plan for all new developments which generate significant amounts of movement, including both employment and residential. All planning applications for developments that generate significant amounts of movement should be supported by a Transport Statement or Transport Assessment, prepared in accordance with the Planning Practice Guidance.	Travel plan measures have been included within an OCTMP (document reference J5) (secured as Requirement 9 of the DCO. Further details are provided in **section 7.8** (see CoT38).
South Ribble Local Plan 2012-2026 (2015)		
Policy 3: Travel.	9.6 A key aim of the core strategy is to encourage people to make more use of other modes of travel. 9.17 Walking and cycling are important modes of transport that the council wishes to encourage because of the important health benefits that they can provide. 9.18 The Core Strategy supports cycling within Central Lancashire and encourages improvements to the cycle network to make it easier and safer for cyclists.	Existing sustainable transport infrastructure is considered within **section 7.6.6** and Volume 3, Figures 7.2 to 7.3 and includes an analysis of public transport services and pedestrian and cycle infrastructure. Travel plan measures including the promotion of sustainable modes of transport (where possible) have been included within an OCTMP (document reference J5) secured as Requirement 9 of the DCO. Further details are provided in **section 7.8** (see CoT38).
Policy G17: Design Criteria for New Development	Planning permission will be granted for new development, including extensions and free standing structures, provided that, where relevant to the development: […] c) The development would not prejudice highway safety, pedestrian safety, the free flow of traffic, and would not reduce the number of on-site parking spaces to below the standards stated in Policy F1, unless there are other material considerations which justify the reduction such as proximity to a public car park. Furthermore, any new roads and/or pavements provided as part of the	**Section 7.11** assesses the impact of construction vehicle movements arising from the onshore and intertidal elements of the Transmission Assets on the LRN and SRN. This includes an assessment of road safety (which includes highway safety and pedestrian safety) and driver delay (which is based upon the free flow of traffic). Parking for the onshore and intertidal elements of the Transmission Assets construction staff will be provided at temporary construction compounds as set out within the OCTMP (document reference J5) secured as Requirement 9 of the DCO. Further details are provided in **section 7.8** (see CoT38).

Policy	Key provisions	How and where considered in the ES
	development should be to an adoptable standard…	
Preston City Transport Plan (2019)		
Key Principles – Growing and Sustainable Economy.	The economy is at the heart of every proposal set out within this Plan. Traffic congestion and car-dependency are already considerable burdens on the city's economy – through lost time, lost business, and spiralling health costs.	Existing sustainable transport infrastructure is considered within **section 7.6.6** and Volume 3, Figures 7.2 to Figure 7.3 and includes an analysis of public transport services and pedestrian and cycle infrastructure. **Section 7.11** assesses the impact of construction vehicle movements arising from the onshore and intertidal elements of the Transmission Assets on the LRN and SRN. Travel plan measures including the promotion of sustainable modes of transport (where possible) have been included within an OCTMP (document reference J5) secured as Requirement 9 of the DCO. Further details are provided in **section 7.8** (see CoT38).
Key Principles – Rebalancing the Transport Mix.	The traditional approach to tackling congestion, widening roads, or upgrading junctions, is only really effective in the short-term. Quite often these same schemes are revised again and again, as demand grows over time. We have to make the most efficient use of the space available and rebalance the transport mix by making bold investments in walking, cycling, and public transport infrastructure.	Existing sustainable transport infrastructure is considered within **section 7.6.6** and Volume 3, Figures 7.2 to 7.3 and includes an analysis of public transport services and pedestrian and cycle infrastructure. **Section 7.11** assesses the impact of construction vehicle movements arising from the onshore and intertidal elements of the Transmission Assets on the LRN and SRN.
The Preston Local Plan 2012-26 (2015)		
Policy ST2 – General Transport Considerations.	All development proposals will need to show that: a) road safety and the efficient and convenient movement of all highway users (including bus passengers, cyclists, pedestrians, and equestrians) is not prejudiced. b) appropriate provision is made for public transport services. c) appropriate measures are included to facilitate access on cycle or on foot. d) where practicable, ensure existing pedestrian cycle and equestrian routes are protected and extended.	**Section 7.6.5** assesses the current road safety environment along the LRN and SRN. The impact of the onshore and intertidal elements of the Transmission Assets on road safety is included in **section 7.11** and the cumulative impact on road safety is assessed in **section 7.13**. Existing sustainable transport infrastructure is considered within **section 7.6.6** and Volume 3, Figures 7.2 to 7.3 and includes an analysis of public transport services and pedestrian and cycle infrastructure. **Section 7.11** assesses the impact of construction vehicle movements arising from the onshore and intertidal elements of the Transmission Assets on the LRN and SRN.
Blackpool Local Plan Part 1: Core Strategy 2012-2027 (2016)		

Policy	Key provisions	How and where considered in the ES
There are no relevant policies on the assessment of traffic and transport.	N/A	N/A
Blackpool Local Plan Part 2: Site Allocations and Development Management Policies (2023) (emerging policy)		
Policy DM32: Wind Energy	1e. the proposal takes account of the cumulative effect that would result from the proposal in conjunction with permitted and existing renewable energy schemes, including those in neighbouring authorities and there is found to be no significant adverse impact. 1f. the local road network can satisfactorily accommodate the development proposed. 2. Where mitigation measures can be achieved to make any identified impacts acceptable these will be secured through negotiation or the use of conditions or planning obligations.	**Section 7.13** considers the cumulative impact of construction vehicle movements arising from the onshore and intertidal elements of the Transmission Assets and other cumulative developments on the LRN and SRN. **Section 7.11** assesses the impact of construction vehicle movements arising from the onshore and intertidal elements of the Transmission Assets on the LRN and SRN. Any mitigation required in relation to traffic and transport has been set out in **section 7.8** .
Policy DM41: Transport requirements for new development	1. New development will only be permitted where the access, travel and safety needs of all affected by the development are met. Proposals must ensure that: a. safe and appropriate connection to the road network is secured for all transport modes requiring access to and within the development; b. convenient, safe and pleasant pedestrian access and cycle routes are provided. Where existing public rights of way, or cycle routes are severed, effective alternative routes must be provided; c. appropriate provision is made for public transport; d. traffic management measures are incorporated to reduce traffic speeds; give pedestrians, people with impaired mobility and cyclists priority; and allow the efficient provision of public transport; e. car, cycle and motorcycle parking is provided in accordance with the parking standards set out in Appendix G1; including the	**Section 7.11** assesses the impact of construction vehicle movements arising from the onshore and intertidal elements of the Transmission Assets on the LRN and SRN including the access, travel and safety needs of all affected. Safe and appropriate connections to the road network incorporating any traffic management measures for construction vehicles to allow for efficient deliveries and access are set out in the OCTMP (document reference J5) secured as Requirement 9 of the DCO. Further details are provided in **section 7.8** (see CoT38). Proposed accesses with relevant traffic management measures to allow for efficient deliveries and access are set out within the OHAMP (document reference J8) secured as Requirement 8 of the DCO. Further details are provided in **section 7.8** (see CoT23). Existing sustainable transport infrastructure is considered within **section 7.6.6** and Volume 3, Figures 7.2 to 7.3 and includes an analysis of public transport services and pedestrian and cycle infrastructure. Parking for the onshore and intertidal elements of the Transmission Assets construction staff will be provided at temporary construction compounds as set out within the

Policy	Key provisions	How and where considered in the ES
	provision of electric vehicle (EV) charging infrastructure; and the layout provides for sufficient levels of servicing and operational space where required; f. additional mitigation measures are factored into the proposal where traffic generated will impact on the surrounding highway network. 2. Transport Assessments and Travel Plans will be required having regard to the thresholds set out in Appendix G2 of the LP.	OCTMP secured as Requirement 9 of the DCO. Further details are provided in **section 7.8** (see CoT38). Travel plan measures have also been included within an OCTMP. This chapter of the ES contains an integrated transport assessment throughout to consider the potential impacts and effects on the operation of the highway network arising from the onshore and intertidal elements of the Transmission Assets in accordance with guidance and best practice.
Blackpool Local Transport Plan (Implementation Plan 2018 to 2021) (2018)		
2. Strategic Objectives	Objective 1 – Improve, maintain, and make best use of Blackpool's transport network; in particular its roads, footways and bridges. Objective 2 – Improve road safety by interventions that reduce the number of people particularly children, killed and seriously injured on Blackpool's roads. Objective 3 – Manage congestion levels on Blackpool's roads, especially where it impacts on local economic performance. Objective 4 – Improve transport to and within the resort, particularly by more sustainable modes, to enhance the visitor experience and support the local economy. Objective 5 – Improve the efficiency and management of parking to support the local economy, especially for shoppers and visitors. Objective 6 – Improve access to healthcare, education, employment, shops, social/leisure opportunities, and resort attractions, particularly by sustainable modes.	Existing sustainable transport infrastructure is considered within **section 7.6.6** and Volume 3, Figures 7.2 to 7.3 and includes an analysis of public transport services and pedestrian and cycle infrastructure. **Section 7.11** assesses the impact of construction vehicle movements arising from the onshore and intertidal elements of the Transmission Assets on the LRN and SRN. Travel plan measures, details on staff parking and other relevant transport elements a have been included within an OCTMP secured as Requirement 9 of the DCO. Further details are provided in **section 7.8** (see CoT38).

7.2.3 Relevant guidance

7.2.3.1 For EIA methodology specific to the assessment of traffic and transport, the following guidance documents have been considered:

- Environmental Assessment of Traffic and Movement (IEMA, 2023) (the 'IEMA guidelines'); and

- Design Manual for Roads and Bridges (DMRB) LA104: Environmental Assessment and Monitoring (Highways England (now National Highways) *et al.,* 2020).

7.2.3.2 The Planning Practice Guidance (PPG) (Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities and Local Government, 2023) supports the NPPF and provides guidance across a range of topic areas.

7.2.3.3 The guidance on 'travel plans, transport assessments and statements' (Department for Communities and Local Government (DCLG), 2014) provides a concise report on the use and importance of transport assessments/statements and travel plans. It considers that transport assessments/statements and travel plans should be proportionate to the size and scope of the proposed development, be tailored to particular local circumstances, and be established at the earliest practicable possible stage of a development proposal. It sets out that: '*the scope and level of detail in a Transport Assessment or Statement will vary from site to site'* and then lists a host of elements that should be considered, relevant parts of which are covered in **section 7.5**, **section 7.9**, **section 7.11** and **section 7.13** of this chapter.

7.2.3.4 This chapter of the ES contains an integrated transport assessment throughout, has been tailored to the local circumstances and is proportionate in size and scope to the onshore and intertidal elements of the Transmission Assets.

7.3 Consultation

7.3.1 Scoping

7.3.1.1 On 28 October 2022, the Applicants submitted an EIA 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, operation and maintenance, and decommissioning phases of the Transmission Assets.

7.3.1.2 Following consultation with the appropriate statutory bodies, the Planning Inspectorate (on behalf of the Secretary of State) provided a Scoping Opinion on 8 December 2022. Key consultation comments raised during consultation activities relevant to traffic and transport are summarised in **Table 7.4**.

7.3.2 Evidence plan process

7.3.2.1 Following scoping, consultation and engagement with interested parties specific to traffic and transport has continued. An evidence plan process (EPP) has been developed for the Transmission Assets, seeking to ensure engagement with the relevant aspects of the EIA process throughout the pre-application phase. The development and monitoring of the evidence plan and its subsequent progress has been undertaken by the EPP Steering Group. The Steering Group comprises the Planning Inspectorate, the Applicants, the Marine Management Organisation, Natural England, Historic England, the

Environment Agency and the Local Planning Authorities as the key regulatory and bodies.

7.3.2.2 As part of the EPP, Expert Working Groups (EWGs) were set up to discuss and agree topic specific matters with the relevant stakeholders.

7.3.2.3 A Traffic and Transport EWG has been created to which the following interested parties have been invited to attend (details of which are set out in **Table 7.4**):

- National Highways;
- LCC;
- Blackpool Council;
- South Ribble Borough Council;
- Preston City Council; and
- Fylde Borough Council.

7.3.3 Section 42 responses

7.3.3.1 The preliminary findings of the EIA process were published in the Preliminary Environmental Information Report (PEIR) in October 2023. The PEIR was prepared to provide the basis for formal consultation under the Planning Act 2008. This included consultation with statutory bodies under section 42 of the Planning Act 2008, as presented in **Table 7.4**.

7.3.4 Summary of consultation responses received

7.3.4.1 A summary of the key items raised specific to traffic and transport is presented in **Table 7.4**, together with how these have been considered in the production of this chapter. It should however be noted that formal responses are provided for all consultation responses received and can be accessed in the Consultation Report (document reference E1).

Table 7.4: Summary of key consultation comments raised during consultation activities undertaken for the onshore and intertidal elements of the Transmission Assets relevant to traffic and transport

Date	Consultee and type of response	Comment raised	How and where considered in the ES
December 2022	Planning Inspectorate (Scoping)	The Planning Inspectorate considers it unlikely that the additional vehicle movements arising from the offshore elements of the Proposed Development via a port (or ports) would result in significant effects upon traffic and transport receptors. The Environmental Statement should however confirm that the anticipated vehicle movements are below the screening values in relevant guidance for these aspects, and if values are exceeded then an assessment should be provided.	The impact of additional vehicle movements on the LRN and SRN relating to the offshore elements of the Transmission Assets during the construction, operation and maintenance and decommissioning stages of the Transmission Assets have been scoped out as presented in **Table 7.14**, which confirms such vehicle movements are below the screening values set out in **section 7.10**.
December 2022	Planning Inspectorate (Scoping)	The Planning Inspectorate considers it unlikely that the additional vehicle movements arising from the operation of the Proposed Development's onshore elements would result in significant effects upon traffic and transport receptors. The Environmental Statement should confirm that the movements are below the screening values in relevant guidance for these aspects and if values are exceeded should be provided.	The impact of additional vehicle movements on the LRN and SRN relating to the onshore and intertidal elements of the Transmission Assets during the operation and maintenance stage have been scoped out as presented in **Table 7.14**, which confirms such vehicle movements are below the screening values set out in **section 7.10**.
December 2022	Planning Inspectorate (Scoping)	The Planning Inspectorate considers it unlikely that the additional vehicle movements arising from the decommissioning of the Proposed Development's onshore elements would result in significant effects upon traffic and transport receptors. The Environmental Statement should confirm that the movements are below the screening values in relevant guidance for these aspects and if values are exceeded should be provided.	The impact of additional vehicle movements on the LRN and SRN relating to the onshore and intertidal elements during the decommissioning stage of the Transmission Assets have been scoped out as presented in **Table 7.14**, which confirms such vehicle movements would be lower than those during the construction stage. Thus, impacts would be no higher than those impacts during the construction phase and no separate assessment is therefore presented.
December 2022	Planning Inspectorate (Scoping)	Any mitigation measures identified as necessary from the assessment should be clearly explained and the ES should set out how these would be secured through the DCO process, such as the Construction Traffic Management Plan (CTMP) and should be	Mitigation measures have been included within an OCTMP (document reference J5) secured by Requirement 9 of the DCO. The OCTMP will form the basis for a final CTMP which will be prepared in consultation with LCC and Blackpool Council as the Local Highway Authority and National Highways as the highway

Date	Consultee and type of response	Comment raised	How and where considered in the ES
		consulted on and where possible agreed with relevant consultation bodies such as the local highway authority.	authority for the strategic road network prior to commencement of development. Further details are provided in **section 7.8** (see CoT38).
December 2022	Blackpool Council (Scoping)	To consider the impact on Clifton Drive (A584), Queensway (B5261) and the M55, Heyhouses Link Road.	The impact of traffic and transport on Clifton Drive North (A584) (L17 and L19), Queensway (B5261) (L20a and L20b) and M55 Heyhouses Link Road (L25 and L26) is set out in **section 7.11**.
December 2022	Blackpool Council (Scoping)	Anticipated HGV and abnormal load routes and loadings to be clarified. Blackpool Council would anticipate a default route from M55 to the coastal area and the western extents of the cable corridor to involve Progress Way/Squires Gate Lane A5230.	The routeing of HGVs and Abnormal Indivisible Loads (AILs) is set out in the OCTMP (document reference J5) secured by Requirement 9 of the DCO. Further details are provided in **section 7.8** (see CoT38).
December 2022	Blackpool Council (Scoping)	With respect to cumulative impacts, assessment to consider the Enterprise Zone and Division Lane West access junction works on Common Edge Road.	Works (by others, not by the Applicants) on the access road between Amy Johnson Way and Common Edge Road for the Blackpool Enterprise Zone started in May 2024 and is expected to last 18 months. These works are expected be completed prior to construction commencing for the onshore and intertidal elements of the Transmission Assets and are therefore not considered as part of this assessment.
December 2022	National Highways (Scoping)	The development has the potential to impact upon the safe and efficient operation of the SRN by generating over 30 two-way movements [per hour] at junctions that could be affected by this scheme during construction phase. Therefore, National Highways is a relevant consultee for this screening opinion and any future application. Comments relating to the LRN should be sought from the appropriate Local Highway Authority.	**Section 7.11** provides an analysis of the impacts on the SRN during construction of the onshore and intertidal elements of the Transmission Assets and sets out there would be only a four month period when there would be up to 33 two-way vehicle movements per hour at junctions on the SRN, which only marginally exceeds 30 two-way vehicle movements per hour.
December 2022	National Highways (Scoping)	National Highways suggest that a Transport Assessment accompanying the planning application includes the following information with regard to any SRN junctions that may need to be significantly utilised as part of the construction of the scheme: - Background and Context;	This chapter of the ES contains an integrated transport assessment throughout to consider the potential impacts and effects on the operation of the highway network arising from the onshore and intertidal elements of the Transmission Assets in accordance with the DfT Circular 02/2013, guidance and best

Date	Consultee and type of response	Comment raised	How and where considered in the ES
		- Existing Conditions; - Planning Policy Context; - Sustainable Access Appraisal; - Development Proposal description; - Trip Generation, Distribution and Assignment; - Baseline and Forecast Year Traffic Flows, both with the Proposed Development and in the absence of the Proposed Development. This should be based on the agreed assessment years. Please note that National Highways will not accept traffic data gathered between March 2020 and September 2021, and between December 2021 until March 2022 due to Covid-19 related travel impacts. Data gathered after lifting of restrictions should be compared with recent pre-pandemic traffic flows adjusted to the current year. - Highway Impact Assessment, including suitable mitigation measures to counter any adverse impacts. - Summary and Conclusions. It is important to note that the TA should accord with the requirements of the governing Department for Transport Circular 02/2013 (or any forthcoming version) in respect of the SRN.	practice and within which all of the information suggested by National Highways is included.
March 2023	Transmission Assets Traffic and Transport EWG Meeting 1. National Highways and LCC.	Onshore impacts. The additional vehicle movements arising from the operation and maintenance, and decommissioning are unlikely to result in significant effects and can be scoped out.	The impact of additional vehicle movements on the LRN and SRN relating to the onshore and intertidal elements during the operation and maintenance and decommissioning stages of the Transmission Assets have been scoped out as agreed with National Highways and LCC within Traffic and Transport EWG Meeting 1 and as presented in **Table 7.14**.

Date	Consultee and type of response	Comment raised	How and where considered in the ES
March 2023	Transmission Assets Traffic and Transport EWG Meeting 1. National Highways and LCC.	Offshore impacts. Additional vehicle movements arising from the offshore elements of the proposed development via a port (or ports) would be unlikely to result in significant effects and can be scoped out.	The impact of additional vehicle movements on the LRN and SRN relating to the offshore elements of the Transmission Assets have been scoped out as presented in **Table 7.14**. and agreed during the scoping stage.
March 2023	Transmission Assets Traffic and Transport EWG Meeting 1. National Highways.	Traffic impacts not known at this stage, any areas of concern along the SRN cannot be identified at this time and will depend upon where particular access points from the SRN will be. The triangle of the M6, M61 and M65 to the south east is likely to require consideration, with roadworks on the M65 anticipated in the coming years. The M6-M55 link at junction 32 will experience congestion in the coming years.	The key points of access to the SRN and considerations at the triangle of the M6, M61 and M65 and the M6-M55 link at junction 32 were discussed further during Transmission Assets Traffic and Transport EWG Meetings 2 and 3 and the impact of additional vehicle movements relating to the onshore and intertidal elements of the Transmission Assets are set out in **section 7.11**.
March 2023	Transmission Assets Traffic and Transport EWG Meeting 1. LCC.	LCC stated that there are no particular areas of concern regarding the local highway network that need to be highlighted at this stage.	Noted.
March 2023	Transmission Assets Traffic and Transport EWG Meeting 1.	Forecast baseline traffic flows and other new road schemes. A number of new road schemes in the area will change future year traffic patterns and traffic flows from current traffic patterns and traffic flows. LCC undertook to provide details of the traffic modelling undertaken for these new road schemes so that a methodology to calculate forecast baseline traffic flows can be devised.	The Applicants followed up this action from EWG Meeting 1 to request details of the traffic modelling undertaken for these new road schemes so that a methodology to calculate forecast baseline traffic flows could be devised, however, these were not received. A Technical Note (attached at Volume 3, Annex 7.1: Alternative methodology for baseline traffic flows) was therefore

Date	Consultee and type of response	Comment raised	How and where considered in the ES
	National Highways and LCC.		prepared in March 2024 and issued to the highway authorities setting out a proposed methodology to calculate forecast baseline traffic flows. Although LCC have not yet responded to that Technical Note, comments from National Highways to that Technical Note were received in April 2024 (as set out in this table below). Further details on the development of the base traffic flows are set out in **section 7.6** and a copy of the Technical Note is attached at Volume 3, Annex 7.1: Alternative methodology for baseline traffic flows.
September 2023	Transmission Assets Traffic and Transport EWG Meeting 2. National Highways and LCC.	An overview of the PEIR assessment was presented to the EWG. Construction traffic flows and routes were presented for comment and to identify key routes and junctions for consideration as part of the Transport Assessment.	The construction traffic flows and routes presented within EWG Meeting 2 were issued separately to the highway authorities for comments. At the time of preparing this chapter of the ES, no response has been received at the time of writing.
November 2023	Section 42 Consultation Response. Treales, Roseacre & Wharles Parish Council	The developer's documentation has currently failed to evidence that they have given weight to, or mitigation of the adverse impacts on the local: residents, communities, economies and environments on: i amenity (disruption & destruction of the rural character of the area, disruption due to construction & traffic) iii highway safety (through inadequate specification & control of traffic. Plus proposed use of narrow rural lanes, also used for residential & leisure access with consequential severe impacts on all users).	**Section 7.11** provides an analysis of the impacts on traffic and transport receptors (including driver delay, severance, non-motorised user delay, non-motorised user amenity and road safety) during construction of the onshore and intertidal elements of the Transmission Assets and identifies possible transport impacts and ways to mitigate them. Any relevant mitigation required in relation to traffic and transport has been set out in **section 7.8** of this chapter.
November 2023	Section 42 Consultation Response.	Insufficient information available on key aspects of the development and lifecycle that are likely to have been of most concern to Fylde communities i.e. no designs or images of the converter stations, no	**Section 7.9** provides details of construction traffic flows and construction traffic routes.

Date	Consultee and type of response	Comment raised	How and where considered in the ES
	Treales, Roseacre & Wharles Parish Council	visuals showing impact from nearest residences, no forecast traffic profiles or volumes, no preferred traffic routes identified.	
November 2023	Section 42 Consultation Response. United Utilities	Construction compounds should not be located on top of United Utilities' apparatus. This is to maintain unrestricted access for maintenance, repair and replacement to discharge statutory duties. Similarly, detailed consideration will need to be given to any proposed construction traffic routes to assess the impact on United Utilities' assets. It will be necessary to ensure that any approach to construction is the subject of a construction management plan to address a range of issues including the protection of United Utilities' assets as well as any wider impact on United Utilities operations.	Construction compounds are not located upon any known assets and the construction traffic routes, or access arrangements, do not restrict access to any such assets. Engagement with United Utilities will continue ahead of the construction process.
November 2023	Section 42 Consultation Response. Mark Menzies – MP	Concern regarding road closures caused by cable trenching specifically for the M55 Heyhouses Link Road and Kilnhouse Lane surrounding Lytham St Annes.	There will be no road closures to the M55 Heyhouses Link Road and Kilnhouse Lane caused by cable trenching, as set out in **Table 7.15**.
November 2023	Ministry of Justice	Concern regarding the proximity of substation accesses to the HMP Kirkham access. Request for the removal of option S2 and to a lesser extent options S1 and S10 to prevent potential issues upon the traffic generated by HMP Kirkham.	**Section 7.11** provides an analysis of the impacts on traffic and transport receptors during construction of the onshore and intertidal elements of the Transmission Assets and identifies possible transport impacts and ways to mitigate them. The OHAMP (document reference J8) secured by Requirement 8 of the DCO sets out proposed accesses to the onshore and intertidal of the Transmission Assets and does not propose those construction access options formerly referred to as S1, S2 and S10. Further details of measures proposed in relation to traffic and transport has been set out in **section 7.8** of this chapter (see CoT23).

Date	Consultee and type of response	Comment raised	How and where considered in the ES
November 2023	Section 42 response – St Annes Council	Concern regarding the impact of road closures of the M55 Heyhouses Link Road and roads within St Annes caused by cable trenching.	There will be no road closures to the M55 Heyhouses Link Road and roads within St Annes caused by open cut trenching activities, as set out in **Table 7.15**.
November 2023	Section 42 response – Lancashire County Council	Concern regarding the impact of any cable trenching causing roadworks and road closures that create congestion for the wider network particularly around Blackpool Airport. Road crossings should be undertaken with directional drilling unless the road is demonstrated to only carry minor volumes of traffic and that traffic can be easily diverted via alternative routes.	There will be no open cut trenching activities or road closures to any roads around Blackpool Airport or any other public A, B and Classified unnumbered roads, save for Leach Lane, as set out in **Table 7.15**. It is expected that open cut trenching of Leach Lane could be undertaken without a road closure and an assessment of the effects of such works is set out in **section 7.11**.
November 2023	Section 42 response – Newton with Clifton Parish Council	Concern regarding the management of construction traffic and the impact of construction traffic including upon on highway surfaces and footways. Includes a request for resurfacing to be a mandated element of Transmission Assets post construction.	**Section 7.11** provides an analysis of the impacts on traffic and transport receptors during construction of the onshore and intertidal elements of the Transmission Assets and identifies possible transport impacts and ways to mitigate them. Any mitigation required in relation to traffic and transport has been set out in **section 7.8** of this chapter. Management measures for construction vehicles have been set out in the OCTMP (document reference J5) secured as Requirement 9 of the DCO, which includes highway condition surveys to identify and resolve any extraordinary deterioration of the highway along the access routes. Further details of measures proposed in relation to traffic and transport has been set out in **section 7.8** of this chapter (see CoT38).
November 2023	Section 42 response – National Highways	National Highways request further information on the locations of traffic surveys undertaken and whether these are on the strategic network. National Highways also have requested more information regarding base traffic flows and any growth factors applied alongside the reports on the proposed road schemes that have been considered.	Details of traffic surveys, growth factors, committed road schemes, other committed developments and base traffic flows are set out in **sections 7.5 and 7.6**. **Section 7.11** provides an analysis of the impacts on traffic and transport receptors during construction of the onshore and intertidal elements of the Transmission Assets and assesses the impact of construction traffic in terms of driver delay and road

Date	Consultee and type of response	Comment raised	How and where considered in the ES
		National Highways stated that the triangle of the M6, M61 and M65 and the M6-M55 link at junction 32 are of high sensitivity and should be assessed as high sensitivity. National Highways request further information on the derivation of construction traffic flows. National Highways suggest that walking, cycling and horse-riding assessment and reviews (WCHAR) are considered within the assessment as there are pedestrian and cycling facilities at the M55 junctions. On the same matter, National Highways seek clarification on whether Equality Impact Assessments will be undertaken. National Highways seek clarification on when a Transport Assessment Scoping Note will be available.	safety at the triangle of the M6, M61 and M65 and the M6-M55 link at junction 32 with both as high sensitivities. **Section 7.9** provides details on the derivation of construction traffic flows. **Section 7.11** provides an analysis of the impacts on traffic and transport receptors during construction of the onshore and intertidal elements of the Transmission Assets upon non-motorised users. There are no proposed changes to any infrastructure along the SRN (including the M55 junctions) as a result of the onshore and intertidal elements of the Transmission Assets and therefore a WCHAR review and equality impact assessments are not necessary. The construction traffic flows and routes presented within EWG Meeting 2 were issued separately to the highway authorities for comments, however, no response was received and the Transport Assessment has been prepared in accordance with the comments received from the EWG meetings and the scoping and consultation comments received from all of the highway authorities during the pre-application, and consultation processes.
November 2023	Section 42 response – Blackpool & The Fylde College	Would like to understand the impact of construction vehicles.	**Section 7.11** provides an analysis of the impacts on traffic and transport receptors during construction of the onshore and intertidal elements of the Transmission Assets and identifies possible transport impacts and ways to mitigate them. Any mitigation required in relation to traffic and transport has been set out in **section 7.8** of this chapter.
November 2023	Section 42 response – South Ribble	Concern regarding the impact on amenity in the area around the Penwortham substation during construction.	**Section 7.11** provides an analysis of the impacts on traffic and transport receptors during construction of the onshore and intertidal elements of the Transmission Assets and identifies possible transport impacts and ways to mitigate them. Any

Date	Consultee and type of response	Comment raised	How and where considered in the ES
	Borough Council		mitigation required in relation to traffic and transport has been set out in **section 7.8** of this chapter.
November 2023	Section 42 response – Counsellor Peter Buckley, St Annes North	Concern regarding road closures caused by cable trenching specifically for Leach Lane, Kilnhouse Lane, Blackpool Road North, Clifton Drive North, Queensway and the M55 Heyhouses Link Road as well as Blackpool Road Playing Fields.	There will be no road closures to Kilnhouse Lane, Blackpool Road North, Clifton Drive North, Queensway and the M55 Heyhouses Link Road or impact upon Blackpool Road Playing Fields caused by cable trenching, as set out in **Table 7.15.** There will be open cut trenching activities on Leach Lane and it is expected that this could be undertaken without a road closure. An assessment of the effects of open cut trenching activities on Leach Lane is set out in **section 7.11**.
November 2023	Section 42 response – Counsellor Bev Duckworth, Newton with Clifton Parish Council	Concern regarding use of the A583 due to the current width of the four-lane carriageway and the highway safety risk for non-motorised users.	**Section 7.11** provides an analysis of the impacts on traffic and transport receptors, including the A583, during construction of the onshore and intertidal elements of the Transmission Assets and identifies possible transport impacts and ways to mitigate them. Any mitigation required in relation to traffic and transport has been set out in **section 7.8** of this chapter.
November 2023	Section 42 response – Counsellor Graham Barker, Blackpool	Concern regarding road closures caused by cable trenching specifically for Common Edge Road and Queensway.	There will be no open cut trenching activities or road closures to Common Edge Road, Queensway or any other public A, B and Classified unnumbered roads, save for Leach Lane, as set out in **Table 7.15**. It is expected that open cut trenching of Leach Lane could be undertaken without a road closure and an assessment of the effects of such works is set out in **section 7.11**.
November 2023	Section 42 response – Counsellor Richard Redcliffe,	Concern regarding road closures caused by cable trenching	There will be no open cut trenching activities or road closures on any public A, B and Classified unnumbered roads, save for Leach Lane, as set out in **Table 7.15**. It is expected that open cut trenching of Leach Lane could be undertaken without a road closure and an assessment of the effects of such works is set out in **section 7.11.**

Date	Consultee and type of response	Comment raised	How and where considered in the ES
	Fylde Council		
April 2024	National Highways. Response to March 2024 Technical Note	Following the submission of the March 2024 Technical Note (Volume 3, Annex 7.1: Alternative methodology for baseline traffic flows), National Highways confirmed that the proposals set out therein to obtain the most up to date available DfT and WebTRIS data for the SRN should enable the establishment of a post-COVID dataset for 2023/2024.	Further details on the development of the base traffic flows are set out in **section 7.6** and a copy of the Technical Note is attached at Volume 3, Annex 7.1: Alternative methodology for baseline traffic flows of the ES. At the time of preparing this chapter of the ES, there has not been a response from LCC.
August 2024	Transmission Assets Traffic and Transport EWG Meeting 3. National Highways and LCC	An overview of the March 2024 Technical Note, key changes to the onshore and intertidal elements of the Transmission Assets in so far as they relate to traffic and transport since PEIR and changes to construction vehicle movement estimates since PEIR following further analysis of the construction metrics were presented to the EWG.	Further details on the development of the base traffic flows are set out in **section 7.6** and a copy of the Technical Note is attached at Volume 3, Annex 7.1: Alternative methodology for baseline traffic flows. **Section 7.11** provides an analysis of the impacts on traffic and transport receptors during construction of the onshore and intertidal elements of the Transmission Assets and identifies possible transport impacts and ways to mitigate them.

7.4 Study area

7.4.1.1 The study area for the assessment of traffic and transport (the study area) focuses on the Onshore Infrastructure Area and Intertidal Infrastructure Area. These are defined as follows.

- Onshore Infrastructure Area: The area within the Transmission Assets Order Limits landward of Mean High Water Springs. Comprising the offshore export cables from Mean High Water Springs to the transition joint bays, onshore export cables, onshore substations and 400 kV grid connection cables, and associated temporary and permanent infrastructure including temporary and permanent compound areas and accesses. Those parts of the Transmission Assets Order Limits proposed only for ecological mitigation/biodiversity benefit are excluded from this area.
- Intertidal Infrastructure Are: The temporary and permanent areas between MLWS and MHWS.

7.4.1.2 These are the parts of the Transmission Assets Order Limits: Onshore (Onshore Order Limits) where potential impacts could occur. The onshore and intertidal biodiversity benefit, enhancement and/or mitigation areas (details of which are within Volume 1, Chapter 3: Project description of the ES) would generate only a limited number of additional vehicle movements on the LRN and SRN. These vehicle movements would not be a daily occurrence, they would be weekly/monthly visits for which each visit would generate two vehicle movements (one visit would generate two vehicle movements on that day of the visit). As set out in **section 7.9** these movements would fall beneath the Rule 1 or Rule 2 thresholds for the assessment of traffic.

7.4.1.3 The study area incorporates those LRN and SRN within the Onshore Infrastructure Area and the Intertidal Infrastructure Area to be used by construction traffic near construction sites and access routes where construction traffic would not be dispersed across the highway network.

7.4.1.4 The study area remains the same as that presented within the PEIR, to which there were no requests for any changes as set out in **Table 7.4**. Volume 3, Figure 7.1 presents the highway links that form the study area.

7.5 Baseline methodology

7.5.1 Methodology for baseline studies

Desk studies

7.5.1.1 A comprehensive desk-based review was undertaken to inform the baseline for traffic and transport. The existing studies and datasets referred to as part of the desk-based review are summarised in **Table 7.5** below to gather information on the:

- identification of sensitive receptors;

- road geometries and layout;
- identification of facilities for sustainable travel;
- identification of potential route options;
- existing publicly available traffic survey/traffic flow data; and
- personal injury accident locations.

Table 7.5: Summary of desk study sources

Title	Source	Year	Author
Identification of sensitive receptors and concentrations of sensitive receptors including Public Rights of Way (PRoWs), non-motorised user routes and schools.	Google Maps Lancashire County Council – Leisure and culture Lancashire County Council – Roads, parking, and travel Blackpool Council – Active Travel	Accessed 2022 to 2024	N/A
Road geometries and layout	Google Maps Ordnance Survey (1:50,000 scale) Land Ranger Map Series	Accessed 2022 to 2024	N/A
Identification of facilities for sustainable travel	Google Maps Lancashire County Council – Roads, parking, and travel Blackpool Transport Stagecoach Preston Bus National Express Trainline	Accessed 2022 to 2024	N/A
Identification of potential route options	Google Maps Ordnance Survey (1:50,000 scale) Land Ranger Map Series	Accessed 2022 to 2024	N/A
Existing publicly available traffic survey/traffic flow data	Department for Transport road traffic statistics National Highways WebTRIS	Accessed 2022 to 2024	N/A
Personal Injury Accident Locations	Crashmap	Data covers 2018 to 2022	N/A

Title	Source	Year	Author
Traffic Flow Data	M55 Heyhouses Link Road Traffic Modelling and Economic Appraisal Report	2019	Jacobs on behalf of LCC

Site-specific surveys

7.5.1.2 Traffic and transport data within the study area was also collected through site-specific traffic surveys consisting of:

- Automatic Traffic Counters (ATCs) along highway links within the study area; and
- Manual Classified Counts (MCCs) at junctions within the study area.

7.5.1.3 These are summarised in **Table 7.6** and full details are set out in Volume 3, Annex 7.1: Alternative methodology for baseline traffic flows. The results of the commissioned traffic surveys and the surveys acquired from online available data is presented at Volume 3, Annex 7.2: Traffic survey data.

Table 7.6: Summary of site-specific surveys

Title	Extent of Survey	Overview of survey	Date	Reference to further information
Traffic Surveys	Along predicted access routes within the study area.	Daily traffic flows and traffic speeds on key road links were measured by placing ATCs for either one-week or two-week periods and weekday peak period traffic flows through junctions were measured by undertaking MCCs.	8 June 2022 - 22 June 2022 21 March 2024 - 27 March 2024	Annex 7.1: Alternative methodology for baseline traffic flows. Volume 3, Annex 7.2: Traffic survey data of the ES.

7.6 Baseline environment

7.6.1 Highway network

7.6.1.1 The main routes into and through the study area north of the River Ribble are the M6, M55, A583, A584, B5261 and B5259. The main routes into and through the study area south of the River Ribble are the M6, M61, M65, A582, A59, and the A582.

7.6.1.2 The M6, M55, M61 and M65 form part of the SRN and are operated and maintained by National Highways. All other roads within the study area form part of the LRN and are operated and maintained by LCC and Blackpool Council.

7.6.1.3 The highway network within the study area is depicted as highway links on Figure 7.1 (see Volume 3, Figures) of the ES.

7.6.1.4 A description of all these highway links, their geometries and layout and their local environs have been presented at Volume 3, Annex 7.3: Description of network links and sensitivity of the ES.

7.6.2 Public transport network

7.6.2.1 Details of local bus services accessible from bus stops located within potential walking distance of the Onshore Infrastructure Area and Intertidal Infrastructure Area are summarised in **Table 7.7** and shown on Figure 7.2 (see Volume 3, Figures) of the ES. It should be noted that **Table 7.7** and **Table 7.8** do not include detail on the Sunday timetables as works are not proposed during this period.

Table 7.7: Summary of local bus services

Service	Operator	Route	Frequency (Monday to Friday)	Frequency (Saturday)	First Service	Last Service
2	STR	Preston – Southport/Ormskirk	Every hour	Every hour	05:55	23:00
2a	STR	Preston – Southport/Ormskirk	Every hour	Every hour	05:48	22:30
X2	Stage Coach Merseyside	Preston – Southport – Liverpool	Every hour	Every hour	04:27	19:25
5	Blackpool Transport	Poulton – Victoria Hospital – Layton – Blackpool – Halfway House	Every 30 minutes	Every 30 minutes	06:00	22:25
5a	Blackpool Transport	Staining – Victoria Hospital – Layton – Blackpool – Halfway House	Every hour	Every hour	06:47	18:42
5b	Blackpool Transport	Blackpool Zoo – Victoria Hospital – Layton – Blackpool – Halfway House	Every hour	Every hour	09:19	17:19
11	Blackpool Transport	Blackpool – St Annes – Lytham Hospital	Every 30 minutes	Every 30 minutes	05:30	23:26
11a	Blackpool Transport	Blackpool – St Annes – Lytham Hospital	Every 30 minutes	Every 30 minutes	05:44	22:59
11b	Blackpool Transport	Blackpool – St Annes – Lytham	Every 40 minutes	Every hour	05:00	22:00
18	Blackpool Transport	Blackpool – Whitegate Drive – South Shore – Mereside Tesco	Every hour	Every hour	07:00	18:00
31	Preston Bus	Preston – Lea – Ashton-on-Ribble	Every 20 minutes	Every 20 minutes	06:10	23:05
48	Preston Bus	Preston - Lea	Every 30 minutes	Every 30 minutes	05:31	19:17
61	Stage Coach Merseyside	Preston – Lea – Wesham – Kirkham – Wrea Green – Blackpool	Every 30 minutes	Every 30 minutes	05:10	23:30
68	Stage Coach Merseyside	Preston – Lea – Freckleton – Warton – St Annes - Blackpool	Every 20 minutes	Every 20 minutes	05:30	23:30
74	Blackpool Transport	Fleetwood – Poulton – Great Eccleston - Lea – Preston	Every hour	Every hour	06:28	19:12

Service	Operator	Route	Frequency (Monday to Friday)	Frequency (Saturday)	First Service	Last Service
75	Blackpool Transport	Fleetwood – Cleveleys – Poulton – Kirkham - Preston	Every hour	Every hour	06:42	19:42
76	Preston Bus	Blackpool – Kirkham – Wrea Green – St Annes	Every hour	Every hour	07:28	19:50
78	Preston Bus	St Annes – Lytham – Kirkham – Elswick – Great Eccleston	Every hour	Every hour	06:15	19:30
100	Preston Bus	Preston – Ashton-on-Ribble - Lea	Every 15 minutes	Every 15 minutes	05:21	22:47
119	R S Tyler & Sons	Chorley - Preston	Every hour	Every hour	06:45	19:17
424	National Express	London Victoria – Birmingham – Stoke-on-Trent – Manchester – Preston - Blackpool	1 service at 23:30			

7.6.2.2 As the study area covers a large area, there are multiple rail stations within the study area including Blackpool South, Blackpool Pleasure Beach, Squire Gate, St Annes-on-the-Sea, Ansdell and Fairhaven, Lytham, Moss Side, Kirkham and Wesham and Salwick.

7.6.2.3 As these rail stations are all located on the same railway line, a summary of the rail services available from these rail stations is summarised below in **Table 7.8**. The locations of key rail stations are shown on Volume 3, Figure 7.2 of the ES.

Table 7.8: Summary of rail services

Destination	Weekday			Saturday		
	First Service	Last Service	Typical Frequency	First Service	Last Service	Typical Frequency
Preston (from Kirkham and Wesham)	05:13	23:55	Every15 minutes	05:33	23:55	Every 20 minutes
Blackpool North (from Kirkham and Wesham)	06:02	01:07	Every 20 minutes	06:02	00:04	Every 20 minutes
Manchester Airport (from Kirkham and Wesham)	05:13	23:38	Every 30 minutes	05:13	23:22	Every 30 minutes
York (from Kirkham and Wesham)	05:33	19:33	Every hour	05:33	21:32	Every hour

7.6.3 Pedestrian and cyclist infrastructure

7.6.3.1 Residential and built-up areas within Blackpool, Lytham St Annes, Kirkham, Wesham, Freckleton, Newton with Scales, Lea, and Penwortham are in close proximity to the Onshore Infrastructure Area and Intertidal Infrastructure Area and have commensurate footway provision throughout. However, there are roads which connect the residential and the built-up areas where there are no footway or pedestrian provisions.

7.6.3.2 The study area is located within an area of Lancashire consisting primarily of agricultural land, however, there are some urbanised areas including Preston and Blackpool and several built-up residential areas.

7.6.3.3 Route 62 of the National Cycle Network (NCN) routes along the coast from Fleetwood to Lytham St Annes where it routes north east to Kirkham and then east to Cottam before connecting with NCN622. NCN622 then routes south towards Preston. Volume 3, Chapter 6: Land use and recreation of the ES covers PRoW and promoted routes in further detail.

7.6.3.4 Construction staff for the onshore and intertidal elements of the Transmission Assets will not be commuting to a fixed location for the duration of the construction phase; therefore, the capacity to commute via walking or cycling will vary.

7.6.3.5 The on-road and off-road cycle routes within the study area are highlighted on Figure 7.3 (see Volume 3, Figures of the ES).

7.6.3.6 A description of the highway links with footway provisions is set out within Volume 3, Annex 7.3: Description of network links and sensitivity of the ES. Figure 7.3 (see Volume 3, Figures of the ES) shows the NCN and PRoWs in the vicinity of the study area along with locations of poor footway provision. Volume 3, Chapter 6: Land use and recreation considers PRoW and promoted routes in further detail.

7.6.4 Base traffic flows

7.6.4.1 **Table 7.5** and **Table 7.6** set out that existing publicly available traffic data has been obtained and that site-specific surveys have been undertaken.

7.6.4.2 Volume 3, Annex 7.1: Alternative methodology for baseline traffic flows of the ES and Volume 3, Annex 7.2 Traffic survey data of the ES sets out the locations and results of these.

7.6.4.3 Volume 3, Annex 7.4 Base traffic flows of the ES sets out the base traffic flows and includes total vehicles (all classifications of all vehicles) and heavy vehicles (HVs), which comprise all vehicles in excess of 7.5 tonnes gross weight and include HGVs and buses.

7.6.4.4 The highway link numbers, and their locations are shown on Figure 7.1 (see Volume 3, Figures of the ES).

7.6.5 Road safety

7.6.5.1 Personal injury accident (PIA) data obtained from Crashmap, which is a database of all road traffic injury accidents as published by DfT, covering the

latest available five-year period 2018 to 2022 (inclusive), has been used to consider road safety within the study area.

7.6.5.2 The Crashmap database has been interrogated for the area comprising the highway links shown on Figure 7.1 (see Volume 3, Figures of the ES) and which form the study area to identify clusters of PIAs (four or more occurring at the same location or within 25 m of each other). These are set out in **Table 7.9** and on Figure 7.4 (see Volume 3, Figures of the ES).

Table 7.9: PIA clusters within the study area

Cluster Id	Location	Number of PIAs
1	A584/Squires Gate Lane/Clifton Drive N signalised junction (L1/L9/L17)	5
2	A5073 Waterloo Road/St Bede's Avenue/A5073 Waterloo Road/Moore Street crossroad (L2)	4
3	A5073 Waterloo Road/B5262 Lytham Road/A5073 Waterloo Road/B5262 Lytham Road roundabout (L2/L3/L4)	8
4	A5073 Waterloo Road/A5099 Central Drive/A5073 Waterloo Road/St Annes Road signalised junction (L3)	10
5	A5073 Waterloo Road/B5261 Ansdell Road/A5073 Waterloo Road/B5261 Hawes Side Lane/Marton Drive signalised junction (L3/L5/L6)	4
6	B5262 Lytham Road/Harrowside/B5262 Lytham Road/Highfield Road signalised junction (L4)	4
7	B5261/Daggers Hall Lane/B5261 Hawes Side Lane roundabout (L5)	4
8	A5073 Waterloo Road (L6) near the A5073 Waterloo Road/Vicarage Lane signalised junction	5
9	A5073 Waterloo Road (L6) near the A5073 Waterloo Road/Newhouse Road priority junction	4
10	Whitegate Drive/A583 Preston New Road/A5073 Waterloo Road/B5390 Park Road signalised junction (L6/L7)	5
11	A583 Preston New Road, approximately 90m east of Whitegate Drive/ A583 Preston New Road/A5073 Waterloo Road/B5390 Park Road signalised junction (L6)	5
12	A583 Preston New Road/Kenneth Drive priority junction (L7)	5
13	A583 Preston New Road/Mythop Road signalised junction (L7)	5
14	A520 Squires Gate Lane at crossroads junction with Stony Hill Ave and Westgate Road (L9/L11/L10)	5
15	A520 Squires Gate Lane/St Annes Road/A520 Squires Gate Lane/Amy Johnson Way signalised junction (L11/L13/L12)	6
16	A5230 northbound arm of A5230 Progress Way/Cropper Road N/A5230 Progress Way/Jenny Lane/Cropper Road Roundabout (L14)	4
17	A5230 southbound arm of A5230 Progress Way/Cropper Road N/A5230 Progress Way/Jenny Lane/Cropper Road Roundabout (L14)	4

Cluster Id	Location	Number of PIAs
18	A5230 eastbound arm of the A5230 Progress Way/Yeadon Way/Ashworth Road/A5230 Roundabout (L16)	4
19	A584 Clifton Drive N/Fletcher Drive priority junction (L17)	5
20	Clifton Drive N/Highbury Road W/Clifton Road N signalised junction (L17/L18)	5
21	Clifton Drive N/St Annes Road W/Clifton Drive S/St Annes Road W signalised junction (L19)	5
22	A584 Clifton Drive/Andsdell Road S/Clifton Drive/Ansdell Road signalised junction (L19)	4
23	B5261 Queensway/Division Lane/B5261 Common Edge Road priority junction (L20)	4
24	A583 Preston New Road/A583 Preston New Road/B5410 Lytham St Annes Way/Hallam Way Roundabout (L29/L42/L28)	4
25	A583 Preston New Road/Whitehall Road/Peel Road/A583 Preston New Road signalised junction (L30/L42)	5
26	B5260 Station Road/B5259 Ribby Road/The Green/B5259 The Green Roundabout (L39/L43/L45/L46)	4
27	Church Road/A584 Lytham Road/Highgate Lane/A584 Lytham Road signalised junction (L47/L49/L55)	4
28	A584 Preston New Road/Lower Lane priority junction (L57)	4
29	A583 Blackpool Road/New Hey Lane/A583 Blackpool Road/Bryning Lane signalised junction (L61)	7
30	A583 Blackpool Road/Preston New Road signalised junction (L61/L58)	5
31	M55 westbound, approximately 1.7km west of J2 (L75)	4
32	M6 southbound onslip from M55 (L78)	10
33	M6 southbound at the River Ribble crossing (L79)	6
34	Roundabout junction between L82 and L84 at Clayton Brook Interchange	5
35	Roundabout junction between L83 and L84 at Clayton Brook Interchange	11
36	Roundabout junction between L84 and L81 at Clayton Brook Interchange	5
37	M55 westbound offslip approach from L76 (L76)	4
38	M6 northbound at junction 29 (L85)	8
39	A582 Lostock Lane/A6/A6 Lostock Lane/A6 signalised roundabout between the A6 Lostock Lane and A6 arms (near L90 and L92)	4
40	A582 Penwortham Way/Chain House Lane/A582 Penwortham Way/Chain House Lane signalised junction	5
41	A582 Golden Way/Pope Lane/A582 Penwortham Way/Pope Lane signalised junction (L97/L96)	8

7.6.5.3 These 41 clusters have then been further assessed by analysing the PIA reports to identify any consistent contributory factors amongst vehicle movements (using consultants' professional judgement), for which there were 14 clusters as set out in **Table 7.10.**

Table 7.10: PIA clusters with patterns of movements

Cluster Id	Location	Number of PIAs
1	A584/Squires Gate Lane/Clifton Drive N signalised junction (L1/L9/L17)	5
11	A583 Preston New Road, approximately 90m east of Whitegate Drive/A583 Preston New Road/A5073 Waterloo Road/B5390 Park Road signalised junction (L6)	5
13	A583 Preston New Road/Mythop Road signalised junction (L7)	5
17	A5230 southbound arm of A5230 Progress Way/Cropper Road N/A5230 Progress Way/Jenny Lane/Cropper Road Roundabout (L14)	4
23	B5261 Queensway/Division Lane/B5261 Common Edge Road priority junction (L20)	4
29	A583 Blackpool Road/New Hey Lane/A583 Blackpool Road/Bryning Lane signalised junction (L61)	7
32	M6 southbound onslip from M55 (L78)	10
33	M6 southbound at the River Ribble crossing (L79)	6
34	Roundabout junction between L82 and L84 at Clayton Brook Interchange	5
35	Roundabout junction between L83 and L84 at Clayton Brook Interchange	11
36	Roundabout junction between L84 and L81 at Clayton Brook Interchange	5
37	M55 westbound offslip approach from L76 (L76)	4
38	M6 northbound at junction 29 (L85)	8
40	A582 Penwortham Way/Chain House Lane/A582 Penwortham Way/Chain House Lane signalised junction	5

7.6.5.4 These 14 PIA clusters have been further assessed to determine the cause of each PIA and to determine whether there were any consistent contributory factors that are attributable to the layout and geometries of the highway network or driver error.

7.6.5.5 PIA cluster one included five PIAs all of which were of slight severity. Three of the PIAs at this location appear to be vehicles turning right from the A584 Clifton Drive North onto Squires Gate Lane; as there is good visibility, it appears these PIAs were a result of driver error. One of the PIAs appears involve a vehicle turning right onto A584 Starr Gate, as this movement is signal controlled it appears this was likely caused by a vehicle failing to observe the signals and therefore driver error. The final PIA within this cluster was a result of shunts and driver error.

7.6.5.6 PIA cluster 11 included five PIAs; four of slight severity and one of serious severity. There were three PIAs involving shunts and driver error. One at this location involved a vehicle turning left from a left turn lane from the A583

Whitegate Drive onto the A583 Preston New Road, as vehicles joining the A583 Preston Road give way it appears this likely a result of failing to give way and therefore driver error. The final PIA occurred when a vehicle changed lane causing a side sweep, it appears this is likely a result of driver error and failure to check before changing lane.

7.6.5.7 PIA cluster 13 involved five PIAs of slight severity, three of these involved vehicles turning right at the junction; as there is good visibility, it appears these PIAs were a result of driver error. One PIA at this location involved bad lane discipline and therefore driver error. The final PIA within this cluster is a result of shunting and driver error.

7.6.5.8 PIA cluster 17 involved four PIAs; three of slight severity and one of serious severity. Further analysis suggests that three of these are a result of shunts and driver error. The final PIA is a result of a vehicle failing to give way at the roundabout, it is concluded this is a result of driver error.

7.6.5.9 PIA cluster 23 involved four PIAs; two of slight severity and two of serious severity. Two of these PIAs involves vehicles turning right onto Division Lane, as vehicles turning right are giving way to vehicles on the B5261 Queensway this PIA appears to be a result of failing to give way and therefore driver error. It appears one of the serious PIAs involves a vehicle waiting to turn right onto Division Lane and colliding with a vehicle continuing along B5261 Queensway causing a collision. It appears this collision is the result of a vehicle failing to give way and therefore driver error. The final PIA at this location appears to be a result of a vehicle causing a collision when moving to the left whilst continuing along the B5261 Queensway. The cause of this PIA is unknown.

7.6.5.10 PIA cluster 29 is located at a signalised crossroad junction connecting the A583 Blackpool Road, Bryning Lane and New Hey Lane. Previously vehicles turning right from the A583 Blackpool Road onto either Bryning Lane or New Hey Lane had to give way. During 2021 this road layout was updated with right turn signals being introduced. Prior to the layout change there were two PIAs with vehicles turning right from the A583 Blackpool Road onto either Bryning Lane or New Hey Lane which appear to involve a vehicle failing to give way. As this movement is no longer give way, these PIAs have been removed from analysis. There is one PIA included within this cluster that involves a right turn onto the A583 Blackpool Road, it appears this is likely caused by a vehicle failing to give way and therefore driver error. One PIA involved an injury within a bus which is not related to the highway layout. One of the PIAs within this PIA cluster involved a pedestrian and a car, it appears that either the pedestrian or the car has failed to observe the signals. A PIA within this cluster occurred as two vehicles are continuing along their respective carriageways and have collided, the point of impact suggests this PIA is caused by a vehicle not observing the signals and therefore driver error. The final PIA within this cluster appears to have occurred when a vehicle has attempted to overtake a cyclist when moving off at the lights. This is likely a result of driver error.

7.6.5.11 PIA cluster 32 involved nine PIAs along the southbound section of carriageway from junction 32 of the M6. Seven PIAs are of slight severity and two are of serious severity. Five PIAs at this location involved vehicles either

hitting objects on or off the carriageway. It appears these are likely to be a result of a driver not paying attention and losing control and therefore driver error. Three PIAs involved shunting and driver error. The final two PIAs at this location have occurred when vehicles are changing lanes causing collisions and therefore appear to be a result of driver error.

7.6.5.12 PIA cluster 33 involved six PIAs along the M6 southbound carriageway near junction 29. Three of these PIAs are of slight severity and involve vehicles hitting carriageway furniture, it is likely that this is a result of a driver losing control or not paying attention and therefore driver error. One collision is a result of shunting and driver error. Another PIA of slight severity involved four vehicles and appears to be caused by a vehicle changing lane, but the cause is inconclusive. The final PIA within this cluster is of slight severity and appears to be caused by vehicles changing lane and hitting or being hit by another vehicle, this is likely to be a result of driver error.

7.6.5.13 PIA cluster 34 involved five PIAs; four of slight severity and one of serious severity. This cluster is located at the Clayton Brook Interchange roundabout. Four of the PIAs appear to involve shunting and driver error. One of the PIAs appears to be a result of vehicles colliding with a vehicle in another lane, this appears to be a result of poor lane discipline and therefore driver error.

7.6.5.14 PIA cluster 35 involved 11 PIAs and is located at the Clayton Brook Interchange roundabout where the M61 northbound slip road meets the M65 roundabout junction. Two PIAs in this cluster have been removed as they appear to have occurred more than 25 m from the junction. Six of the PIAs appear to be a result of shunting and driver error. Two PIAs within this cluster involved vehicles hitting objects or debris; these PIAs are likely caused by drivers either not paying attention or losing control of their vehicles and therefore driver error. The final PIA within this cluster occurs as a vehicle fails to give way and therefore is a result of driver error.

7.6.5.15 PIA cluster 36 involves five PIAs of slight severity and is located at the Clayton Brook Interchange roundabout where the west bound slip road from Tramway Lane meets the M65/M61 roundabout junction. It appears that three of these PIAs are a result of shunting and driver error. One of the PIAs at this location was a result of a vehicle failing to give way and therefore driver error. The final PIA within this cluster is a result of a vehicle hitting furniture off carriageway, this is likely of a vehicle losing control or not paying attention and therefore driver error.

7.6.5.16 PIA cluster 37 involved four PIAs; three of slight severity and one of serious severity. All four of these involved shunting and driver error.

7.6.5.17 PIA cluster 38 involved eight PIAs, located on the northbound carriageway of the M6 near Bamber Brooke Interchange roundabout. Two of these PIAs have been removed as they are located on the grade separated roundabout junction. Two PIAs appear to be a result of shunting and driver error. Two PIAs are of slight severity and involve vehicles hitting objects or debris; it is likely these PIAs are a result of drivers not paying attention or losing control therefore are likely driver error. One of the slight PIAs involved a vehicle changing lane, it is probable that this involves a driver not checking before changing lane and therefore driver error. The final PIA within this cluster

involved four vehicles colliding at night in frosty/icy conditions; it is likely that drivers were not driving in line with the conditions and therefore this PIA would appear to be a result of driver error.

7.6.5.18 PIA cluster 40 involved five PIAs; four of slight severity and one of serious severity. One PIA appears to involve a vehicle turning right onto the A582 Penwortham Way and failing to observe the traffic signals and therefore driver error. Another serious PIA at this location involved a vehicle turning right onto A582 Penwortham Way and failing to give way which is driver error. One PIA of slight severity appears to involve a vehicle continuing along the A582 Penwortham Way and a vehicle continuing on Chain House Lane, one of the vehicles has failed to observe the signals, which is driver error. One of the PIAs appears to involve a vehicle turning right onto Chain House Lane and failing to observe the signals which is driver error. The final PIA at this location involved shunting and driver error.

7.6.5.19 An analysis of the PIA clusters presented in **Table 7.10** determined there were no consistent contributory factors amongst the PIAs that could be attributed to the highway network. It is considered that there are no underlying road safety issues along the highway network within the study area.

7.6.6 Future baseline conditions

7.6.6.1 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 Transmission Assets.

7.6.6.2 Future baseline traffic flows are calculated by applying traffic growth rates to observed traffic flows and then adding the traffic flows generated by any committed developments. Committed developments are those that have been through the consenting process and have planning consent, are not yet generating any traffic flows (for example, because the development has not yet been built out yet) but are expected to generate traffic flows during the construction phase of the onshore and intertidal elements of the Transmission Assets.

7.6.6.3 This methodology in the treatment of other developments is a transport assessment methodology. The transport assessment considers sustainability, the ultimate capacity of the highway network and the impact of development upon the transport network. Developments that already have planning consent have already been through that process and have identified any highway and transport improvements/interventions that may or may not 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.

7.6.6.4 For this reason, those developments (traffic flows and their highway and transport mitigation schemes) form part of a future transport baseline scenario for any other developments that follow. In doing that, the impact of development proposals that follow consented developments is able to be determined in the knowledge of what has already been consented in transport and highways terms along with the need for any additional highway and transport improvements that may be necessary.

7.6.6.5 Other developments that 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 (if required).

7.6.6.6 The transport assessment 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 chapter of the ES adopts this same approach in terms of committed developments and cumulative developments as part of the integrated transport assessment.

7.6.6.7 Using the cumulative effects assessment (CEA) long list, those projects that have planning consent 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 would generate within the study area. Those that would generate negligible levels within the study area are discounted from the process and those that would generate material levels within the study area are retained.

7.6.6.8 The traffic growth rates obtained from TEMPro include for organic changes in background traffic flows and also for changes in traffic caused by new development. Therefore, the application of traffic growth rates makes an allowance for new traffic flows generated by committed developments. The committed developments that are discounted from the above process are not therefore discounted entirely because the traffic flows that they would generate are included as part of the growth rates that are applied to the base traffic flows. The traffic flows generated by those committed developments are therefore allowed for within the assessment via the growth rates.

7.6.6.9 To establish which committed developments are retained, a filtering process is undertaken. Once that process is complete, the traffic flows generated by those that are retained are added to the base traffic flows to create the future baseline traffic flows. For those that are 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.

7.6.6.10 Upon identifying the committed developments, those that would not generate a material level of traffic within the study area and those that do not have a temporal overlap with the construction of the onshore and intertidal elements of the Transmission Assets are discounted.

7.6.6.11 The planning applications of the remaining committed developments are then interrogated to determine their traffic generation. Committed developments are only retained if a form of TA or traffic and transport chapter of an ES was submitted in support of their planning application (i.e., they would generate a

level of traffic that could be material within the study area and are therefore retained as a committed development).

7.6.6.12 The TA/ES of the remaining committed developments are then interrogated to establish their estimations of vehicle movements within the study area. Professional judgement is used to determine whether these traffic flows are material and whether the development should be retained as a committed development.

7.6.6.13 The remaining are then confirmed as committed developments, as set out in **Table 7.11** below.

7.6.6.14 Volume 3, Annex 7.1: Alternative methodology for baseline traffic flows of the ES sets out that the A582 South Ribble Western Distributor Dualling proposal does not have planning consent and does not have a commencement date. It sets out that the commencement year of construction of the onshore and intertidal elements of the Transmission Assets is anticipated to be 2027 at the earliest and that it is not considered likely that the A582 South Ribble Western Distributor Dualling would have been granted planning consent, constructed and open to traffic by the time construction of the Transmission Assets is underway. It therefore sets out a proposal that the A582 South Ribble Western Distributor Dualling would not be open to traffic during the peak construction of the onshore and intertidal elements of the Transmission Assets and therefore new observed traffic survey data would be obtained to estimate the base traffic flows.

7.6.6.15 Since the preparation of that note, LCC announced revised plans for the A582 corridor in March 2024 to improve provision for sustainable travel and improve journey times along the A582 corridor using new and advanced technology. LCC need to prepare an outline business case, a full business case and then seek funding from the Government before any such improvements could be implemented. It is unlikely that any such scheme would be implemented in time for the commencement of construction and the peak construction of the Transmission Assets in 2027 respectively. Notwithstanding, given that the proposals are no longer to dual the A582 corridor, if any such scheme progresses, there would likely be negligible changes upon baseline traffic flows as a result of that scheme on its own.

7.6.6.16 As a result, the proposed means of establishing 2027 base traffic flows set out within Volume 3, Annex 7.1: Alternative methodology for baseline traffic flows of the ES remains appropriate.

7.6.6.17 The evolution of the observed traffic flows to the 2027 baseline traffic flows is set out in Volume 3, Annex 7.4 Base traffic flows of the ES.

Table 7.11: Committed development

Project/Plan	Status	Distance from the Transmission Assets (nearest point, km)	Description of project/plan	Dates of construction (if applicable)	Dates of operation (if applicable)	Overlap with the Transmission Assets
22/0593	Permitted	1.04	Demolition of existing structures and erection of a mixed-use development comprising: 1) a use class e foodstore (1804 sqm gross internal area) with associated vehicular access, car parking, servicing area, electrical sub-station, and hard and soft landscaping, and, 2) 80 no. Use class b8 small storage / warehouse units with vehicular access, car parking and landscaping arrangements.	Unknown	Unknown	Yes (operational phase)

7.6.7 Key receptors

7.6.7.1 **Table 7.12** identifies the key receptors considered in the assessment. These are the highway links within the study area as identified on Figure 7.1 (see Volume 3, Figures) and in Volume 3, Annex 7.3: Description of network links and sensitivity of the ES.

7.6.7.2 Sensitivities are qualified using the criteria set out in **section 7.10**, **Table 7.18**, the review of the links set out in Volume 3, Annex 7.3: Description of network links and sensitivity of the ES and professional judgement.

Table 7.12: Key receptors

Link	Sensitivity	Qualification
L1: A584 between Waterloo Road and Squires Gate Lane	High	30 mph restricted single carriageway road within residential and commercial area along the seafront with high footfall and on-street parking.
L2: Waterloo Road between A585 and B5262 roundabout	Medium	One way only, 20 mph restricted single carriageway road within commercial area. Shop frontage along length but adequate footway provision for its use and footfall.
L3: A5073 Waterloo Road between B5262 roundabout and B5261	Medium	30 mph restricted single carriageway road within residential area and commercial area, good footway provision for its use and footfall. Frontage to residential dwellings with some on-street parking. Some instances of road collisions and clusters at three junctions along link.
L4: B5262 between A5073 Waterloo Road and A5230 Squires Gate Lane	High	30 mph restricted single carriageway road within residential area with good/adequate footway provision commensurate for its use and footfall. Frontage to residential dwellings. Some on-street parking. School and park located along link.
L5: B5261 between A5073 Waterloo Road and A5230 Squires Gate Lane	High	30 mph restricted single carriageway road within residential area with frontage to residential dwellings. School and church along link. Unsegregated cycleways and on-street parking. Adequate footway provision commensurate with use and footfall.
L6: A5073 Waterloo Road between B5261 roundabout and Preston New Road	Medium	30 mph single carriageway road within residential area with frontage to residential dwellings. Unsegregated cycleways and on-street parking. Adequate footway provision commensurate with use and footfall.
L7: A583 between B5390 and M55 J4	Medium	30-40 mph restricted dual carriageway road within residential area with some frontage to residential dwellings. Some unsegregated cycleways but adequate footway provision commensurate for its use and footfall.
L9: A5230 Squires Gate Lane between A584 Clifton Drive N and Westgate Road	Medium	30 mph restricted dual carriageway road in built up area with footway provision commensurate with use and footfall.
Link 10: Westgate Road	High	30 mph restricted, narrow single carriageway road with residential dwellings with frontage access on both sides

Link	Sensitivity	Qualification
		of carriageway, with access provided along link to other residential roads. On street parking on both sides of carriageway and footway provision commensurate with use and footfall.
Link 11: A5230 Squires Gate Lane between Westgate Road and Amy Johnson Way	Medium	30 mph restricted dual carriageway road in built up area with footway provision commensurate with use and footfall. Residential dwellings with frontage access. Some on-street parking and unsegregated cycleways at parts.
Link 12: Amy Johnson Way	Low	30 mph restricted single carriageway road in industrial area with footway provision commensurate with footfall and use.
Link 13: A5230 Squires Gate Lane between Amy Johnson Way and B5261	High	30 mph restricted dual carriageway road within a residential built-up area with some frontage to residential dwellings but footway provision not commensurate with footfall and use.
Link 14: A5230 Progress Way between B5261 and Ashworth Road Roundabout	Low	40 mph restricted dual carriageway road with footways provided in places commensurate to footfall and use.
Link 16: A5230 Progress Way between Ashworth Road roundabout and M55 J4	Low	Dual carriageway road subject to NSL of 70mph, low instances of road collisions and clusters with no other sensitive receptors.
Link 17: A584 Clifton Drive North between A5230 Squires Gate Lane and North Beach Car Park	Medium	30 mph restricted single carriageway road. Receptors with some sensitivity to traffic flows including open spaces, nature reserves within a residential built-up area. Footway provision commensurate with footfall and use. Unsegregated cycleways and off road cycleway.
Link 18: Highbury Road West between A584 and St Anne's Old Links Golf Club	Medium	30 mph restricted single carriageway road within a residential area with frontage to residential dwellings and on-street parking. Footways commensurate with footfall and use. Some on street parking along link and some instances of road collisions and clusters.
Link 19: A584 Clifton Drive North between North Beach Car Park and Saltcotes Road	High	30 mph restricted single carriageway road. Built up residential area, with extensive frontage to residential dwellings and a school and hospital along link. Section of link within built up areas and commercial areas. On-street parking and unsegregated cycleways.
Link 20a: B5261 Queensway between A5230 Waterloo Road and accesses A7 / A8	Medium	30 mph restricted single carriageway road, initial section of link is residential with on-street parking. Footway provision is commensurate with footfall and use.
Link 20b: B5261 Queensway between accesses A7 / A8 and Kilnhouse Lane	Low	40 mph restricted single carriageway road, some accesses to residential areas but no residential frontage. Footways are commensurate with footfall and use. Some segregated cycleways along parts of link.
Link 22a: Kilnhouse Lane from B5261 Queensway and Blackpool Road North junction	Medium	30 mph restricted single carriageway roads within a residential area with some industrial and commercial units. Some areas with on-street parking. Footway provision commensurate with footfall and use.

Link	Sensitivity	Qualification
Link 22b: Blackpool Road North from Kilnhouse Lane junction and access A5	High	20 mph restricted single carriageway roads within a residential area with a park along link. Some areas with on-street parking. Footway provision commensurate with footfall and use.
Link 23: B5261 Heyhouses Lane between Blackpool Road North and B5410 junction	Medium	30 mph restricted single carriageway road within residential area with some sensitive receptors including restaurants and shops. Some on-street parking and footway provision generally separated from the carriageway by verges and commensurate with footfall and use. Some unsegregated cycleways.
Link 24: B5261 Heyhouses Lane between B5410 junction and A584 Clifton Drive	Medium	30 mph restricted single carriageway road within residential area with some sensitive receptors including restaurants, churches, and shops. Some on-street parking but footway provision separated from the carriageway by a verge on one side and commensurate with footfall and use.
Link 25: B5410 Lytham St Annes Way between B5261 Heyhouses Lane junction and Moss Hall Lane	Low	30 mph restricted single carriageway road, some accesses to residential areas but no residential frontage. Some on-street parking, footways are commensurate with footfall and use. Some unsegregated cycleways along parts of link.
Link 26: B5410 from Moss Hall Lane and roundabout with School Road	Low	M55 Heyhouses Link Road. Single carriageway road with no frontage access and shared use footway / cycleway generally segregated from the carriageway by a verge.
Link 28: B5410 Lytham St Annes Way between roundabout with School Road and Preston New Road roundabout	Low	40 mph restricted single carriageway road with adequate footway provision for footfall and use.
Link 29: A583 Preston New Road between B5410 Lytham St Annes Way roundabout and M55 J4 roundabout	Negligible	No sensitive receptors directly along link, however, footways provided to bus stop and nearby residential area which is commensurate with footfall and use.
Link 30: Peel Road between Ballam Road and Preston New Road	Low	40 mph restricted single carriageway road. No footways at locations, limited in some areas commensurate with demand.
Link 31a: Ballam Road between Peel Road and accesses A16 / A19	Low	Single carriageway road with variance in speed restrictions at different sections. Some residential frontage but with lighting and commensurate footway provision in locations of demand.
Link 31b: Ballam Road between accesses A16 / A19 and A584 East Beach	High	Single carriageway road derestricted in speed initially becoming restricted to 30 mph at southern end. Golf course located along link. On-street parking, frontage access to residential dwellings and some sensitive receptors including a primary school, a park, shops and restaurants at southern end of link. Footway provision commensurate with footfall.
Link 37: Saltcotes Road between A584 Preston Road and accesses A25 / A28	Medium	Single carriageway road with some speed restriction variances. Some sensitive receptors including open spaces and residential areas, with footway provision commensurate with footfall and use.

Link	Sensitivity	Qualification
Link 39a: B5259 Saltcotes Road between B5260 Station Road and Corka Lane Access	High	Single carriageway road with variances in speed restriction. Within Wrea Green receptors of high sensitivity including a school with limited footway provision.
L39b: B5259 Saltcotes Road between Corka Lane Access and A25 / A26.	Medium	Single carriageway road with variances in speed restrictions based on section. Some sensitive receptors through Moss Side with railway crossing and residential dwellings with frontage access and limited footway provision.
Link 41: Ballam Road between Peel Road and Fox Lane Ends	Low	Single carriageway road restricted to 40 mph with limited frontage access and footway provision commensurate for use and demand.
Link 42: A583 Preston New Road between B5410 Lytham St Annes Way roundabout and Fox Lane Ends	Low	Single carriageway road restricted to 40 mph. Some frontages to residential dwellings. Footway provision commensurate for use and demand.
Link 43a: B5260 Fox Lane Ends between A583 Preston New Road and Ballam Road	Negligible	Single carriageway road derestricted. Limited frontage access to residential and agricultural units. Footway provision commensurate with footfall.
Link 43b: B5260 Fox Lane Ends between Ballam Road and B5259 Ribby Road roundabout	High	Single carriageway road. Some receptors of high sensitivity through Wrea Green including pub, school, and restaurant with frontage access. Limited footway provision through Wrea Green.
Link 45: B5259 Ribby Road between B5260 Station Road mini roundabout and A583 Blackpool Road	High	Single carriageway road. Some receptors of high sensitivity including residential dwellings with frontage access, church, and village green with limited footway provision Sensitivity decreases towards Ribby.
Link 46: Bryning Lane between B5260 Station Road roundabout and accesses A34 / A37	High	Single carriageway road. Receptors of high sensitivity including residential dwellings with frontage access, post office and village green with limited footway provision. South of Wrea Green residential area continues with limited footway provision at some locations.
Link 47: Bryning Lane between accesses A34 / A37 and A584 Lytham Road	High	Single carriageway road with variances in speed restriction. Towards Lytham Road some receptors including frontage to residential dwellings, on-street parking and a church. Some areas with limited footway provision.
Link 49: A584 Preston Road between Saltcotes Road and Church Road	High	Single carriageway road with speed restrictions between 30 mph and 50 mph. Some residential and commercial areas. Some receptors including school and nursery with footway provision commensurate with footfall and use.
Link 50: A583 Blackpool Road between Fox Lane Ends and A585 roundabout	Medium	Single carriageway road restricted to 50 mph. Some frontages to residential dwellings. Footway provision generally commensurate for use and demand with some areas of limitations. Unsegregated cycleways along length.
Link 51: A585 between A583 Blackpool Road and J3 of M55	Low	Some receptors set back from the carriageway including retail park with Aldi and fast-food restaurants, some commercial dwellings, and a football club. Footway provision commensurate with footfall and use.

Link	Sensitivity	Qualification
Link 52: A583 Blackpool Road between A585 and Kirkham Road	Low	50 mph single carriageway road with section of dual carriageway road. Grammar school segregated from link by hedgerow however may create footfall onto this link.
Link 53: Kirkham Road between A583 Kirkham Bypass and access A42 / A43	Medium	40 mph restricted single carriageway road within residential area at some locations. Some narrow footways in locations. Access to HMP Kirkham along link.
Link 54: Kirkham Road between access A52 / A53 and A584 Preston New Road	High	Single carriageway road restricted to 30 mph and 20 mph during school times in school zone. Towards A584 sensitive receptors including school and frontage access to residential dwellings with on-street parking. Some areas of limited footway provision.
Link 55: A584 Preston New Road between Church Road and Kirkham Road	High	Single carriageway to dual carriageway road with speed restriction of 30 mph to 50 mph respectively. Some sensitive receptors including a school, shops and restaurants but footway provision commensurate with footfall and use.
Link 57a: A584 Preston New Road between accesses A48 / Morecambe substation access and A49	Low	50 mph restricted dual carriageway road with some limited frontage access to residential dwellings. Footway provision is intermittent and narrow at places, this is but commensurate with use and footfall demand. Unsegregated cycleways along length.
Link 57b: A584 Preston New Road between Kirkham Road and access A48	Low	50 mph restricted dual carriageway road with limited frontage access to residential dwellings. Good footway provision commensurate with use and demand in Freckleton. To the east of Freckleton footway provision is intermittent and narrow at places but commensurate with use and footfall. Unsegregated cycleways along length. One PIA cluster along link involving one serious road collision and three slight road collisions.
Link 58a: A584 Preston New Road between A583 Blackpool Road and access A51	Negligible	No sensitive receptors.
Link 58b: A584 Preston New Road between accesses A49 / A51	Low	50 mph dual carriageway road. Small area of commercial units with access from link. Footway provision on southern side of carriageway, becomes intermittent between Clifton Business Park and The Courtyard Café access commensurate with use and demand.
Link 61a: A583 Kirkham Bypass between Freckleton/Kirkham Road and access Morgan substation access.	Negligible	Single carriageway road with speed restriction of 50 mph. Good footway provision commensurate with footfall and use.
Link 61b: A583 Kirkham Bypass between Morgan substation access and access A50	Low	Single carriageway road with speed restriction of 50 mph. Limited Receptors of low sensitivity including limited dwellings with frontage access. Sections with unsegregated cycleways.
Link 61c: A583 Kirkham Bypass between access A50 and accesses A52 / A53	Low	Single carriageway road with speed restriction of 50 mph. Limited receptors along link. Sections with unsegregated cycleways.

Link	Sensitivity	Qualification
Link 61d: A583 Kirkham Bypass between accesses A52 / A53 and Preston New Road	Negligible	Single carriageway road with 50 mph speed restriction. Footway provided on southern side of carriageway, commensurate with footfall.
Link 63: Lodge Lane between accesses A55 and A583	Low	30 mph single carriageway road with narrow footway along link commensurate with use and demand.
Link 65a: A583 Blackpool Road between Preston New Road and access A56	Low	50 mph single carriageway road. Footway provided on southern side of carriageway commensurate with use and demand.
Link 65b: A583 Blackpool Road between accesses A56 / A57	Low	50 mph single carriageway road with limited receptors along link. Footway provided on southern side of carriageway.
Link 65c: A583 Blackpool Road between access A57 and Preston Western Distributor	Low	50 mph single carriageway road becoming a dual carriageway road towards Preston Western Distributor. Footway provided on southern side of carriageway commensurate with use and demand.
Link 67: Preston Western Distributor Road between A583 and Cottom Link Road	Negligible	No sensitive receptors – Recently opened Preston Western Distributor road.
Link 68: Preston Western Distributor Road between Cottom Link Road and East-West Link Road	Negligible	No sensitive receptors – Recently opened Preston Western Distributor road..
Link 69: William Young Way between A582 Edith Rigby Way and Sandy Lane	Negligible	No sensitive receptors – Recently opened Preston Western Distributor road..
Link 70: Preston Western Distributor Road between East-West Link Road and M55 J2	Negligible	No sensitive receptors – Recently opened Preston Western Distributor road..
Link 71: A585 Riverways between Preston Western Distributor and Nelson Way	Negligible	No sensitive receptors – Recently opened Preston Western Distributor road..
Link 72: Nelson Way from A583 Riversway to access A58	Low	30 mph restricted single carriageway road within an industrial area. Limited receptors including an industrial park. Street lighting and footways provided commensurate with footfall and use. Some on street parking.
Link 73: M55 between M6 J32 and M55 J1	High	A junction where congestion can occur.
Link 74: M55 between J1 (A6) and J2 (Preston Western Distributor)	Negligible	No sensitive receptors.
Link 75: M55 between J2 (Preston Western Distributor) and J3 (A585)	Negligible	No sensitive receptors.

Link	Sensitivity	Qualification
Link 76: M55 between J3 (A585) and J4 (Preston New Road)	Negligible	No sensitive receptors.
Link 77: M6 (north of M55 junction)	High	A junction where congestion can occur.
Link 78: M6 between J32 and J31A	High	A junction where congestion can occur.
Link 79: M6 between J31A and J31	Negligible	No sensitive receptors.
Link 80: M6 between J31 and J30	High	A junction where congestion can occur.
Link 81: M61 between M6 J30 and M61 J9 (M65 junction)	High	A junction where congestion can occur.
Link 82: M65 east of J2 (M61 junction)	High	A junction where congestion can occur.
Link 83: M61 south of M61 J9 (M65 junction)	High	A junction where congestion can occur.
Link 84: M65 between M61 J9 and M6 J29	High	A junction where congestion can occur.
Link 85: M6 between M6 J30 (M61 junction) and A6 junction	High	A junction where congestion can occur.
Link 87: M6 south of J29 (M65 junction)	High	A junction where congestion can occur.
Link 90: A6 north of A582 roundabout	Negligible	No sensitive receptors.
Link 91: A6 between M65 roundabout and A582 roundabout	Negligible	No sensitive receptors.
Link 92: A582 Lostock Lane between B5254 Watkin Lane roundabout and A6 roundabout	Low	Dual carriageway road derestricted. Limited receptors including limited residential frontage and commercial units. Footway provision on northern side of carriageway commensurate with footfall and use. Shared cycleway footway along northern edge of carriageway.
Link 93: A582 Farrington Road between B5254 Watkin Lane junction and Croston Road junction	Low	Limited receptors along link. Single carriageway road for the most part derestricted. Small section of PRoW at western part of link. PRoW users using verge for approximately 50 m.
Link 94: A582 Flensburg Way	Low	Limited receptors but unsegregated cycleway on northern side of carriageway along link.
Link 95: A582 Penwortham Way between Flensburg Way roundabout and Chain House Lane junction	Low	50 mph restricted single carriageway road with unsegregated cycleway. No frontage access and footway provision commensurate with use and demand.
Link 96: A582 Penwortham Way between Chain House Lane junction and Pope Lane	Low	50 mph restricted single carriageway road with unsegregated cycleways. No frontage access and footway provision commensurate with use and demand.

Link	Sensitivity	Qualification
Link 97: A582 Penwortham Way between Pope Lane and A59 junction	Low	50 mph restricted single carriageway road with unsegregated cycleways. No frontage access and footway provision commensurate with use and demand.
Link 98: A59 John Horrocks Way between A582 roundabout and Liverpool Road junction	Negligible	No sensitive receptors.
Link 99: A59 south west of Liverpool Road junction to Stanley Avenue roundabout	Medium	- Dual carriageway road restricted to 30 mph, limited frontage access to residential dwellings and frontage to a school. Shared footway and cycleway on both sides of carriageway. Footway provision commensurate with footfall and use.
Link 100: Liverpool Road between A59 junction and Howick Cross Lane access	Low	30 mph restricted single carriageway road. Limited frontage to limited residential dwellings and access to a residential area. Shared footway and cycleway on both sides of carriageway. Footway provision commensurate with footfall and use.
Link 101: Howick Cross Lane between Liverpool Road and Penwortham substation access	Medium	20 mph restricted single carriageway road with some frontage to residential dwellings and some on-street parking. Footway provided along residential frontage side of carriageway commensurate with footfall and use.
L102: Leach Lane N / Appealing Lane / The Hamlet	High	20 mph restricted single carriageway road with frontage access to residential dwellings and some on street parking. Footway provision along length commensurate with footfall and use.

7.7 Scope of the assessment

7.7.1.1 The scope of this ES has been developed in consultation with relevant statutory and non-statutory consultees as detailed in **Table 7.4**.

7.7.1.2 Taking into account the scoping and consultation process, **Table 7.13** summarises the impacts considered as part of this assessment.

Table 7.13: Impacts considered within this assessment

Activity	Impacts scoped into the assessment
Construction phase	
Additional vehicle movements or works such as trenching, required to facilitate construction of the onshore and intertidal elements of the Transmission Assets may impact the effective operation of the LRN, SRN and other transport receptors (e.g., PRoW) and cause driver (including public transport) and non-motorised user delay or fear and intimidation (non-motorised user amenity).	The impact of construction works and increases in traffic flows as a result of construction traffic upon driver (including public transport) and non-motorised user delay and fear and intimidation (non-motorised user amenity) for users of the LRN and SRN.
Additional vehicle movements or works, such as trenching, required to facilitate construction of the onshore and intertidal elements of the Transmission Assets could limit the mobility/access of users of the LRN, SRN and other transport receptors (e.g., PRoW), causing severance between communities (including community facilities).	The impact of construction works and increases in traffic flows as a result of construction traffic upon severance for users of the LRN and SRN.
Additional vehicle movements required to facilitate construction of the onshore and intertidal elements of the Transmission Assets could impact the safety of users of the LRN, SRN and other transport receptors (e.g., PRoW).	The impact of increases in traffic flows as a result of construction traffic upon road safety for users of the LRN, SRN and other transport receptors.
Construction of the onshore and intertidal elements of the Transmission Assets require the transportation of AILs, which may impact the safety of users of the LRN, SRN and other transport receptors (e.g., PRoW).	The impact of AILs on the safety of and delay to users of the LRN, SRN and other transport receptors.

7.7.1.3 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 7.14.**

Table 7.14: Impacts scoped out of the assessment

Impacts	Justification
Offshore elements of the Transmission Assets	
The impact of additional vehicle movements on the LRN and SRN on driver and non-motorised user delay, fear and intimidation (non-motorised user amenity), severance, public transport delay and road safety during construction, operation and maintenance of the offshore elements of the Transmission Assets.	All land-based traffic and transport movement generated by the offshore elements of the Transmission Assets would be via a base port (or ports). The selection of such a port (or ports) is not known at the time of writing and will be selected post-consent. Such facilities would operate under the existing port (or ports) planning consents or where any new consents are required would be subject to relevant new planning applications. Notwithstanding that the port (or ports) would already have or would need to obtain its own separate planning consent for such movement, a qualitative consideration of the land-based traffic generation of the offshore elements of the Transmission Assets has been undertaken in the context of the screening values (the IEMA thresholds which delimit the extent of assessment) set out in **section 7.10**. Given the offshore nature of the work, materials associated with the offshore elements of the Transmission Assets are delivered by sea either directly or via a marshalling port or storage port. The principal land-based traffic and transport movements that would be generated at the port (or ports) relates to personnel. As a guide, a review of **Table 7.21** that delimits the extent of assessment for the onshore and intertidal elements of the Transmission Assets shows that there is only one link where the Rule 1 or Rule 2 thresholds to delimit the extent of assessment (as set out in **section 7.10**) are exceeded on account of total vehicle movements (i.e. when not considering solely HGV movements) and that was on account of low baseline traffic flows. By their nature, ports generate land-based traffic movements along their associated access routes throughout the day associated with the activities undertaken therein and daily traffic flows along those routes are generally not low as a result. Using **Table 7.21** as a guide and on the basis of baseline traffic flows along the access routes to ports not being low, it is not expected that the land-based traffic and transport movements generated by the offshore elements of the Transmission Assets would exceed the Rule 1 or Rule 2 thresholds that delimit the extent of assessment (as set out in **section 7.10**). Therefore, an assessment of the potential impact of additional vehicle movements on the LRN, SRN and other transport receptors during construction, operation and maintenance of the offshore elements of the Transmission Assets is scoped out. This was agreed through the Scoping Opinion and EWG Meeting 1 (see **Table 7.4**).
Construction of the onshore and intertidal elements of the Transmission Assets	
The impact of hazardous loads on the LRN and SRN during construction of the onshore and intertidal elements of the Transmission Assets.	No hazardous loads are anticipated during the construction of the onshore and intertidal elements of the Transmission Assets, save for potential fuel deliveries associated with generators, Legislation under the Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations (Department for Transport, 2009) places strict controls on the transportation of fuel and its

Impacts	Justification
	associated safety and therefore no assessment of hazardous loads is necessary.
Operation and maintenance of the onshore and intertidal elements of the Transmission Assets	
The impact of additional vehicle movements on the LRN and SRN on driver and non-motorised user delay, fear and intimidation (non-motorised user amenity), severance, public transport delay and road safety during operation and maintenance of the onshore and intertidal elements of the Transmission Assets (including biodiversity benefit and mitigation only areas).	The operation and maintenance of the onshore and intertidal elements of the Transmission Assets (including onshore and intertidal biodiversity benefit, enhancement and/or mitigation areas) (details of which are within Volume 1, Chapter 3: Project description of the ES) would generate only a limited number of additional vehicle movements on the LRN and SRN. These vehicle movements would not be a daily occurrence, they would be weekly/monthly visits for which each visit would generate two vehicle movements (one visit would generate two vehicle movements on that day of the visit). Using **Table 7.21** as a guide for baseline traffic flows, such a level of movement would not exceed the Rule 1 or Rule 2 thresholds set out in **section 7.9.3.19**. The onshore and intertidal elements of the Transmission Assets do not require any manned facilities and would be monitored remotely, requiring only maintenance activities. Therefore, the potential impact of additional vehicle movements on the LRN, SRN and other transport receptors during operation and maintenance of the onshore and intertidal elements of the Transmission Assets is unlikely to result in significant effects and is scoped out of the assessment for traffic and transport. This was agreed through the Scoping Opinion and EWG Meeting 1 (see **Table 7.4**)).
Decommissioning of the onshore and intertidal elements of the Transmission Assets	
The impact of additional vehicle movements on the LRN and SRN on driver and non-motorised user delay, fear and intimidation (non-motorised user amenity), severance, public transport delay and road safety during decommissioning of the onshore and intertidal elements of the Transmission Assets.	Decommissioning of the onshore and intertidal elements of the Transmission Assets is likely to operate within the construction parameters. The Onshore Decommissioning Plan (CoT36) will include provisions for the removal of all onshore above ground infrastructure and the decommissioning of below ground infrastructure and details relevant to flood risk, pollution prevention and avoidance of ground disturbance. The Onshore Decommissioning Plan will be in line with the latest relevant available guidance. The Onshore Decommissioning Plan will include measures to be included in the CTMP, updated as necessary. See **section 7.8** of this chapter for further details of the measures proposed (see CoT36). Therefore, the potential impact of additional vehicle movements on the LRN, SRN and other transport receptors during the decommissioning of the onshore and intertidal elements of the Transmission Assets based would be no higher than those impacts during the construction phase and no separate assessment is therefore presented.

7.8 Measures adopted as part of the Transmission Assets (commitments)

7.8.1.1 For the purposes of the EIA process, the term ‘Measures adopted as part of the Transmission Assets’ is used to include the following types of mitigation

measures (adapted from IEMA, 2016). These measures are set out in Volume 1, Annex 5.3: Commitments Register of the ES.

- Embedded mitigation. This includes the following.
  - Primary (inherent) mitigation - measures included as part of the project 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 Code of Construction Practice or similar.
- 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.

7.8.1.2 In addition, where relevant, measures have been identified that may result in enhancement of environmental conditions. Such measures are clearly identified within Volume 1, Annex 5.3: Commitments Register of the ES. The measures relevant to this chapter are summarised in **Table 7.15** and those relating to the CTMP are set out in **Table 7.16** (these will be developed through ongoing discussions with the Local Highway Authorities and National Highways).

7.8.1.3 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 7.11** below (i.e., the initial determination of impact magnitude and significance of effects assumes implementation of these measures). This ensures that the measures that the Applicants are committed to are taken into account in the assessment of effects.

7.8.1.4 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 7.15: Measures (commitments) adopted as part of the Transmission Assets

Commitment number	Measure adopted	How the measure will be secured
Embedded measures		
CoT02	The following features will be crossed by trenchless techniques, as set out in the Onshore Crossing Schedule submitted as part of the application for development consent: • A, B and Classified unnumbered roads (known as C roads) (including the Preston Western Distributor Road, A582 South Ribble Western Distributor Upgrade and M55 Heyhouses Link Road; excluding Leech Lane); • All Environment Agency Main Rivers, including: Moss Sluice, east of Midgeland Road along Pegs Lane; Savick Brook, south of A583; Wrea Brook southeast of Cartmell Lane; Dow Brook east of Lower Lane between the A584 and the A583; Middle Pool north of Lund Way; and • All Network Rail crossings, including along the line which runs between Blackpool North and Preston, south of Cartmell Lane; and at the Network Rail crossing along the line which runs to Blackpool North, south east of Squires Gate, parallel to the A584.	DCO Schedules 2A & 2B, Requirement 5(2) (Detailed design parameters onshore); DCO Schedules 2A & 2B, Requirement 8 (Code of Construction Practice)
CoT18	Core working hours for the construction of the intertidal and onshore works will be as follows: • Monday to Saturday: 07:00 - 19:00 hours; and • up to one hour before and after core working hours for mobilisation (“mobilisation period”) i.e. 06:00 to 20:00. Activities carried out during the mobilisation period will not generate significant noise levels (such as piling, or other such noisy activities). In circumstances outside of core working practices, specific works may have to be undertaken outside the core working hours. This will include, but is not limited to, works being undertaken within and/or adjacent to Blackpool Airport and cable installation at landfall and at the River Ribble. Advance notice of such works will be given to the relevant planning authority.	DCO Schedules 2A & 2B, Requirement 14 (Construction hours)
CoT23	Temporary access points from the public highway will be installed to facilitate vehicular access into the onshore export cable corridor, 400 kV grid connection cable corridor and Onshore Substations, during construction, in accordance with the indicative outline highway access designs set out within Outline Highways Access Management Plan, prepared and submitted with the application for development consent.	"DCO Schedules 2A & 2B, Requirement 10 (Highway accesses); Access to Works Plan"

Commitment number	Measure adopted	How the measure will be secured
CoT24	Where practicable, during construction, access routes within the onshore export cable corridor and 400kV grid connection corridor (i.e. for example, the use of haul roads) will be used, to minimise potential impacts to the local road network.	DCO Schedules 2A & 2B, Requirement 9 (Traffic and Transport) Access to Works Plan
CoT35	An Outline Code of Construction Practice (CoCP) has been prepared and submitted with the application for development consent. Detailed CoCP(s) will be developed in accordance with the Outline CoCP. The Outline CoCP includes measures to maintain and address: • flood protection and control measures; • water environment and drainage; • pollution prevention; • geology and ground conditions; • ecology and nature conservation (including protected species and invasive species); • historic environment; • soil management; • traffic and transport; • noise management measures; • air quality and dust management; • landscape and visual; • recreation; and • bentonite breakout.	DCO Schedules 2A & 2B, Requirement 8 (Code of Construction Practice)
CoT36	Onshore Decommissioning Plan(s) will be developed prior to decommissioning. The Onshore Decommissioning Plan(s) will include provisions for the removal of all onshore above ground infrastructure and the decommissioning of below ground infrastructure (if and where relevant and practicable), and details relevant to flood risk, pollution prevention and avoidance of ground disturbance. The Onshore Decommissioning Plan(s) will be in line with the latest relevant available guidance.	DCO Schedules 2A & 2B, Requirement 22 (Onshore decommissioning)

Commitment number	Measure adopted	How the measure will be secured
CoT37	Vehicle movements associated with operation and planned maintenance of the onshore infrastructure will operate only during the daytime and evening periods (i.e. 07:00 – 23:00). Vehicle movements may however be subject to unscheduled events outside these hours.	DCO Schedules 2A & 2B, Requirement 9 (Traffic and Transport)
CoT38	An Outline Construction Traffic Management Plan (CTMP) has been prepared and submitted with the application for development consent. CTMP(s) will be developed in accordance with the outline CTMP prior to construction. The detailed CTMP(s) will set out measures to include: 1. managing the numbers and routing of HGVs during the construction phase; 2. managing the movement of construction worker traffic during the construction phase; 3. details of measures to manage the safe passage of HGV traffic via the local highway network; and 4. details of localised road improvements if and where these may be necessary to facilitate safe use of the existing road network.	DCO Schedules 2A & 2B, Requirement 9 (Traffic and Transport)
Secondary measures		
N/A	None required.	N/A

Table 7.16: Indicative measures included in the Outline CTMP and OHAMP

Measures to be included: Traffic control
Highway condition survey. The OCTMP (CoT38 as set out in **Table 7.15**) sets out that a pre-entry condition survey (e.g., video condition survey) will be undertaken before the start of works and after the substantial completion of works on minor road links and new junctions used by HGVs to access the onshore export cable corridor. Damage to the highway that has been demonstrably caused by construction traffic will be repaired.
Reinstatement of highway. At all vehicle accesses where accommodation works are being undertaken to allow the movement of vehicles between the onshore export cable corridor and the highway the original highway will be reinstated after construction work is completed.
HGV operating hours near schools. Where applicable, the OCTMP (CoT38 as set out in **Table 7.15**) sets out restrictions on HGV operating hours, along those sections of the highway network that provide access to local schools.

Measures to be included: Traffic control
HGV operating hours though sensitive areas. Where applicable, the OCTMP (CoT38 as set out in **Table 7.15**) sets out restrictions on HGV operating hours and measures to minimise the number of HGV movements through sensitive areas when access to for construction works is essential.
HGV access routes. The OCTMP (CoT38 as set out in **Table 7.15**) and OHAMP (CoT23 as set out in **Table 7.15)** set out access routes for HGVs to ensure appropriate routes are utilised and any associated impacts caused by HGV movements are minimised.
The OCTMP (CoT38 as set out in **Table 7.15**) sets 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.
The OCTMP (CoT38 as set out in **Table 7.15**) sets out measures to minimise dust and dirt associated with the movement of construction vehicles, where appropriate.
The OCTMP (CoT38 as set out in **Table 7.15**) includes provision of appropriate parking, loading/unloading and turning facilities for construction workers.
The OCTMP (CoT38 as set out in **Table 7.15**) sets out traffic management measures at those points where open cut techniques may be used to cross the public highways (i.e. Leach Lane) or where existing private access rights may be affected.
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
A route for AILs will be identified (this will be between the port of entry / landing facility, the SRN and the onshore substations). The route timing and method of transport of AILs will be discussed and agreed with the relevant stakeholders, including the relevant highways authorities *Lancashire County Council and National Highways), where applicable.
It is expected that a number of AILs comprising large components such as transformers will be transport to the onshore substation sites. The heavy haulage contractor appointed to undertake this work will be required to comply with statutory regulations in terms of consulting with the relevant stakeholders.
The timing of AIL deliveries will be discussed with the relevant highway authorities to minimise delay for other road users and to minimise risk to highway users. The timing of AIL deliveries to the onshore substations will be discussed to minimise delays to other road users, where possible.
The routeing of AIL deliveries will be agreed with the relevant highway authorities, post-consent. The delivery of AILs would typically 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 road users. Further details will be agreed with the relevant stakeholders, post-consent.

7.9 Key parameters for assessment

7.9.1 Maximum design scenario

7.9.1.1 The maximum design scenarios identified in **Table 7.17** 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 Project Design Envelope provided in Volume 1, 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 7.17: Maximum design scenario considered for the assessment of impacts

Impact	Phase[a]			Maximum Design Scenario	Justification
	C	O	D		
The impact of increases in traffic flows as a result of construction traffic upon driver (including public transport) and non-motorised user delay or fear and intimidation (non-motorised user amenity) for users of the LRN and SRN.	✓	x	x	**Construction phase** • A concurrent construction scenario for the onshore and intertidal elements of the Transmission Assets is assumed as the maximum design scenario. • A reasonable assumption is that up to 75% of staff may drive themselves to work with limited access by sustainable modes of travel. (Assumed up to 25% of staff assumed to car share). • A peak construction assessment year of 2027 is adopted. • It is assumed that all materials etc are transported by HGV and no allowance for rail or maritime has been included. • A six day working week (Monday to Saturday 07:00 to 19:00) has been adopted. **Construction phase: Landfall** • Entry pits for the direct pipe will be situated within the transition joint bay area within Blackpool Airport: The maximum number of entry pits will be six, with a maximum direct drill entry pit area of 450 m^2 per circuit with a depth of 6 m. The total duration of entry pit works which is included within the overall transition joint bay construction works is 18 months assuming a concurrent construction scenario. • Exit pits on the beach: The maximum number of exit pits will be six, with a maximum area of drill exit pit of 875 m^2 per circuit, with a depth of 3 m. The maximum cofferdam area dimensions per pit is 75 m^2 (15 m x5 m). The total duration of exit pit works on the beach is 2 weeks per circuit. • For the offshore export cable installation between exit pits and MLWS, the burial at the of the offshore export cables seaward of the direct pipe exit pits will via open trenching. The maximum number of trenches will be six. The maximum width of the stepped trench is 10 m at the top and 3 m at the bottom and are each 3 m deep. The maximum length per trench is 300 m with a maximum working area each side of the trench of 25 m. Area of disturbance for each trench is 15,000 square metres (m^2) and the total volume of material excavated for all six trenches is 35,100 cubic metres (m^3).	**Construction phase** Assuming a concurrent construction of the Morgan Offshore Wind Project Transmission Assets and the Morecambe Offshore Windfarm Transmission Assets (rather than sequential construction), represents the largest number of construction compounds and the greatest number of construction vehicle movements and thus the greatest impact on the highway network. The shortest duration of construction represents the greatest potential for impacts on pedestrian delay and amenity; severance; temporary delays to public transport services; and road safety for transport receptors as a result of higher daily numbers of HGV movements. The highest reasonable estimates of the number of cable trenches, link boxes, joint bays, HDD compounds, construction compounds, number of buildings and the greatest depth of the engineered fill for the haul road and stabilised backfill represents the greatest potential for impacts on pedestrian delay and amenity; severance; temporary delays to public transport services; and road safety
The impact of increases in traffic flows as a result of construction traffic upon severance for users of	✓	x	x		

Impact	Phase[a]			Maximum Design Scenario	Justification
	C	O	D		
the LRN and SRN.				• The open trench will transition to a beach trencher, this will be 3 m wide and up to 1,250 m long, the trench will be contained within a working corridor with a 50 m width.	for transport receptors as a result of larger numbers of HGV movements.
The impact of increases in traffic flows as a result of construction traffic upon road safety for users of the LRN, SRN and other transport receptors.	✓	x	x	• Cable pull in and burial will take up to six weeks per circuit and the maximum total duration of cable pull in and burial is 36 weeks assuming a sequential construction scenario. • There will be up to four compounds required west of the transition joint bays to MLWS: – Compound 1 (welfare): 300 m^2 to be active for 36 weeks; – Compound 2: 2,500 m^2 to be active for 48 weeks; – Compound 3: 510 m^2 to be active for 48 weeks; and – Compound 4: 600 m2 to be active for 24 months (in a concurrent construction scenario. • There will be two transition joint bay compounds (10,000 m^2 for Morgan and 10,000 m^2 for Morecambe) within Blackpool Airport to facilitate construction works, to be active for up to 18 months over a 24 month period (concurrent construction scenario). – Maximum working area of the transition joint bay: 4,900 m^2 for Morgan and 2,800 m^2 for Morecambe. **Construction phase: onshore export cables** • The maximum number of trenches will be six, with a target trench depth of 1.8 m. • Onshore export cable construction corridors width 100 m, with a length of up to 17 km. Width will include two haul roads. There will be up to 110 joint bays and 110 link boxes, with 1,000 m^3 and 8 m^3 of material excavated for each joint bay and link box respectively. • There will be two haul roads, each is 6 m wide excluding passing places. Each will be constructed using imported engineered granular fill with geotextile and/or geogrid layers with a nominal thickness of 400 mm and a maximum thickness of up to 1000 mm. • There will be up to ten construction compounds along the onshore export cable corridor. During a concurrent construction, compounds will be present for 36 months with the following attributes: – 2 type A compounds, a maximum total area of 26,500 m^2; – 6 type B compounds a maximum total area of 79,500 m^2; and – 2 type C compounds a maximum total area of 17,500 m2.	Adopting the first full year of construction with the highest daily volumes of construction traffic for assessing the impact of construction traffic represents the year in which the greatest impact will result. This is because baseline traffic flows generally grow year-on-year and therefore such a year results in the greatest increases in traffic flows relative to the baseline traffic flows. Assuming that all materials etc are transported by HGV rather than rail or maritime etc results in the greatest number of HGV movements and thus 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 MDS for the River Ribble crossing is direct pipe, as this would generate the greatest number of HGV movements.

Impact	Phase[a]			Maximum Design Scenario	Justification
	C	O	D		
				• The maximum number of HDD locations is 120. Each major HDD location will have a compound, measuring up to 100 m x 50 m. Drilling mud will be stored and used at these compounds. • The compounds will be located within the onshore export cable corridor. Soils will be removed and stored on site and crushed stone or other suitable materials will be used across the entire area to create hardstanding. **Construction phase: onshore substations** • The combined permanent footprint of the Morecambe onshore substation and Morgan onshore substation 223,500 m^2, including eight main buildings, with two access roads at 15 m width (each) and temporary substation compound. • The area of temporary compounds (combined) includes working and laydown areas (excludes permanent substation footprint) is 122,500 m^2 (additional to permanent footprint). Duration: 30 months in a concurrent scenario.. **Construction phase: 400 kV grid connection cable** • Open cut trenching: The maximum number of trenches will be four, with a target trench depth of 1.8 m. The width of the permanent cable corridor is 50 m. There will be a total of 60 joint bays and 60 link boxes. • The working area will include a construction corridor width of 76 m (which includes two haul roads), with a length of up to 13 km. Duration of installation of up to 36 months (sequential construction scenario). • There will be a maximum of 46 HDD crossings (excluding the Ribble Estuary crossing) and the HDD compound locations will be 100 m x 50 m. • Trenchless technologies will be used to cross the River Ribble. Direct pipe is considered to represent the MDS as this creates a higher number of HGV movements. • There will be up to eight construction compounds along the 400 kV grid connection cable corridor. During a concurrent construction scenario compounds will be present for 36 months with the following attributes: – 2 type A compounds, a maximum total area of 26,270 m2; – 4 type B compounds a maximum total area of 52,540 m2; and	

Impact	Phase[a]			Maximum Design Scenario	Justification
	C	O	D		
				– 2 type C compounds a maximum total area of 17,500 m2. • There are two haul roads each 6 m wide excluding passing places. Each will be constructed using imported engineered granular fill with geotextile and/or geogrid layers with a nominal thickness of 400 mm and a maximum thickness of up to 1000 mm.	
The impact of AILs on the safety of users of the LRN, SRN and other transport receptors.	✓	x	x	**Construction phase** • A reasonable maximum estimate for cable drum dimensions and weights such that they are AILs will maximise their transportation requirements 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.	**Construction phase** 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.

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

7.9.2 Access

7.9.2.1 Access points to the Onshore Infrastructure Area and Intertidal Infrastructure Area of the Transmission Assets have been identified; the location of these accesses and preliminary access design layout with any associated traffic management measures are set out within the OHAMP (document reference J8, see CoT23).

7.9.2.2 For each section there is an associated compound with an access. For the purposes of this assessment, it is assumed that construction vehicles will travel to the compound (as set out in **section 7.9.3** and Volume 3, Annex 7.5: Construction vehicle trip generation assumptions of the ES) for each section and then will use the haul road to route to different sections of the cable corridor. For areas where there is no continuous haul road, construction vehicles will route from the compound to the access associated with the lockout.

7.9.2.3 The substation accesses and their access roads will be permanent accesses to enable ongoing, albeit only occasional, access to maintenance and inspection related vehicles once the onshore and intertidal elements of the Transmission Assets are operational.

7.9.3 Construction vehicle trip generation, distribution and assignment

Construction vehicle trip generation

7.9.3.1 The construction vehicle movements associated with the construction of the onshore and intertidal elements of the Transmission Assets has been undertaken by using a first principles approach based upon estimates of construction materials, construction and engineering requirements and construction programme.

7.9.3.2 The estimates use the maximum design scenario set out in **Table 7.17** of this chapter which assumes a concurrent construction of onshore substations rather than sequential construction. The construction metrics used for this assessment are set out in Volume 3, Annex 7.5: Construction vehicle trip generation assumptions of the ES.

7.9.3.3 For the purposes of calculating the estimates, given its length, the onshore export cable corridor and 400 kV grid connection cable corridor are separated into sections and the number of daily construction vehicle movements are estimated for each section and for each month of the construction programme. From that, the peak months (in terms of construction vehicle movements) for each section of the onshore export cable corridor and 400 kV grid connection cable corridor can be identified. In turn, this allows the peak number of daily construction vehicle movements to be calculated for each section of the onshore export cable corridor and 400 kV grid connection cable corridor.

7.9.3.4 The peak number of daily construction vehicle movements for each section are then aggregated to calculate the total number of daily

construction vehicle movements for the onshore export cable corridor and 400 kV grid connection cable corridor.

7.9.3.5 Similar estimates are made for landfall and the onshore substations (albeit they do not have 'sections'). Based on this, the total number of peak daily construction vehicle movements for the onshore and intertidal elements of the Transmission Assets are determined.

Origin of construction HGV movements

7.9.3.6 The origin of construction HGV movements cannot be determined at this stage and will be predicated upon the procurement of materials at the time of construction.

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

7.9.3.8 There are four entry highway links to the study area as follows, which are detailed on Figure 7.1 (see Volume 3, Figures).

- The M6 north of Junction 32 (highway link 77).
- The M6 south of Junction 29 (highway link 87).
- The M61 (highway link 83).
- The M65 (highway link 82).

7.9.3.9 Based upon a simple spread of entries to the study area, this would equate to 25% of all construction HGVs arriving from (and then departing to) each of these.

7.9.3.10 However, there is no certainty on this. Therefore, to ensure a robust assessment, it is assumed that up to 66.6% (i.e., two-thirds) of all construction HGVs could arrive from (and then depart to) each of these.

7.9.3.11 It should be noted that if 66.6% of all construction HGVs were to travel via one of these entry highway links, then the remaining 33.3% (i.e., one-third) would be spread over the remaining three entry highway links. Therefore, in such an instance, assuming 66.6% of construction HGVs on another entry highway link is unachievable in practice.

7.9.3.12 However, such an assumption allows for a reasonable maximum number of construction HGVs on each of these entry highway links for assessment purposes.

7.9.3.13 The aggregation of the above equates to 266%, however, to ensure the assessment remains reasonable, the proportion of construction HGVs on any one highway link is capped at 100% as discussed during EWG meetings.

Origin of construction staff movements

7.9.3.14 Construction staff will comprise two types; those that are specialist in the construction of such infrastructure and would find temporary accommodation in the local area during the construction period and those that are general contractors (non-specialist) who would commute from their home.

7.9.3.15 From the experience of other similar projects, 30% of the construction staff are specialist and 70% are non-specialist as discussed during EWG meeting 3.

7.9.3.16 Details on the calculation of the origin of the construction staff are set out in Annex 7.5: Construction vehicle trip generation assumptions of the ES. In summary, separate gravity models were constructed for the specialist and the non-specialist construction staff as discussed during EWG meeting 3. For the specialist construction staff, temporary accommodation comprising budget hotels were used to determine their origin of travel whilst population centres were used to determine their origin of travel for non-specialist construction staff.

Assignment of construction vehicle movements

7.9.3.17 The OHAMP (document reference J8, see CoT23) presents the locations of temporary construction accesses to the onshore infrastructure area, each of which has been matched to its respective section of the landfall, onshore export cable corridor, onshore substations and 400 kV grid connection cable corridor.

7.9.3.18 An indicative plan showing the access routes to each temporary construction compound access is set out in the OCTMP (document reference J5) (CoT38 as set out in **Table 7.15** and at Annex 7.5: Construction vehicle trip generation assumptions of the ES.

7.9.3.19 The peak daily construction vehicle movements have been assigned onto the SRN and LRN in accordance with the above and as attached at Volume 7, Annex 7.6 Traffic flows with construction traffic of the ES.

7.10 Assessment methodology

7.10.1 Overview

Impact assessment criteria

7.10.1.1 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 those which are described in further detail in Volume 1, Chapter 5: Environmental assessment methodology of the ES.

7.10.1.2 The assessment within this chapter has been prepared in accordance with the IEMA guidelines (IEMA, 2023) with reference to DMRB LA104: Environmental Assessment and Monitoring (Highways England *et al*., 2020) where relevant.

7.10.1.3 A transport assessment has been incorporated into this chapter and has been prepared in accordance with the comments received from the EWG.

7.10.1.4 The significance of transport environmental effects has been assessed 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 chapter has assessed the construction traffic flows against the future year baseline traffic flows.

7.10.1.5 Consistent with the IEMA guidelines, the following are considered in this chapter:

- driver delay (including temporary delays to public transport services;
- severance;
- non-motorised user delay;
- fear and intimidation (non-motorised user amenity);
- road safety; and
- abnormal Indivisible Loads.

7.10.1.6 Paragraph 3.11 of the IEMA guidelines (IEMA, 2023) recognises that professional judgement should be used as part of the assessment and states the following:

'The assessment of certain impacts may therefore depend more on description and judgement than any commonly agreed method, However even where impacts are well studied, the methods of assessment are in state of evolution. There may be a number of alternative assessment methods, in which case the competent traffic and movement expert should provide reasons, simply states for the actual choice of method'.

7.10.1.7 The following impacts of construction traffic are considered within other chapters of this ES.

- Noise, within Volume 3, Chapter 8: Noise and vibration of the ES which is based upon traffic flows derived from this chapter.
- Air quality, within Volume 3, Chapter 9: Air quality of the ES which is based upon traffic flows derived from this chapter.
- PRoWs, within Volume 3, Chapter 6: Land use and recreation of the ES.
- Human health, within Volume 1, Annex 5.1: Human health of the ES.

Delimiting the extent of assessment

7.10.1.8 In terms of the assessment of the environmental impacts of traffic and movement, the IEMA guidelines sets out the following two 'rules' to delimit the geographic 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.

7.10.1.9 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, guidance provided in the IEMA guidelines.

7.10.1.10 In accordance with the IEMA guidelines, for rule 1, any highway link with increases in total traffic flows that exceed 30% or HGVs that exceed 30% are included within the assessment. For rule 2, those highway links that were not included within 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.

7.10.1.11 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.

7.10.1.12 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 (incorporating delay to public transport) 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.

7.10.1.13 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.

7.10.1.14 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 proposals may create a road safety issue.

7.10.1.15 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.

7.10.1.16 The determination of key locations within the traffic and transport study area for assessment upon driver delay and road safety are set out in **section 7.11**.

7.10.2 Receptor sensitivity/value

7.10.2.1 The definition of sensitivity in this chapter uses professional judgement and experience and guidance provided in the IEMA guidelines. The criteria used in this chapter are outlined in **Table 7.18** below.

Table 7.18: Sensitivity criteria

Sensitivity	Definition
High	High concentration of receptors with greatest sensitivity due to site-specific characteristics which make them particularly sensitive to changes in traffic flow, high instances of road collisions and clusters with reference to PIA data, urban/residential/built-up roads without commensurate footway provision, high footfall, severely congested junctions.
Medium	Some concentrations of receptors with some sensitivity to traffic flows including congested junctions, 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, some instances of road collisions with reference to PIA data.
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.

7.10.2.2 All links are assessed against the rule 1 threshold. Links that are defined as high sensitivity are deemed as sensitive, in accordance with the IEMA guidance thresholds, and are additionally assessed against the rule 2 threshold.

7.10.3 Magnitude of impact

7.10.3.1 The criteria for defining magnitude in this chapter are based upon the guidance set out in the IEMA guidelines and are outlined in **Table 7.19** below.

Table 7.19: Magnitude of impact criteria

Sensitivity	Negligible	Low	Medium	High
Driver delay	Defined in conjunction with the transport assessment and a review of the change in traffic flows or 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	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%.
Fear and intimidation (non-motorised user amenity)	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 HV increase in total 18hr HV flow	One step change in the level of fear and intimidation, but with >400 vehicle increase in average 18hr vehicle movements and/or >500 HV increase in total 18hr HV flow	Two step changes in the level of fear and intimidation
Accidents and road safety	Defined from a review of PIA data along highway links and the predicted changes in traffic flow.			
AILs	Defined by an assessment of the suitability of the access routes to accommodate AILs.			

7.10.4 Significance of effect

7.10.4.1 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 7.20**. Where a range of significance levels is presented, the final assessment for each effect is based upon professional judgement.

7.10.4.2 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.

7.10.4.3 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 7.20: Assessment matrix

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

7.10.4.4 Where there are no predicted changes in traffic flows, the magnitude of impact is 'no change' and no effect would arise.

7.10.4.5 The definitions for significance of effect levels are described as follows.

- 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.

7.10.5 Assumptions and limitations of the assessment

7.10.5.1 The base data and survey data have been obtained from recognised sources and methodologies. In this sense, there are few limitations to their use. The traffic survey data is considered representative of current conditions.

7.10.5.2 At this stage, there are no procurements in place and the resultant origins of materials cannot be confirmed. The procurement of material

affects the movement of construction HGVs and thus affects the number of construction HGVs along each road link. It is likely 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. **Section 7.9** has therefore devised a methodology that accounts for this day-to-day variance by increasing the average amount of vehicles travelling to/from any particular location and thus maximising this variance within the assessment.

7.10.5.3 Overall, there are few limitations to the data and the use of that data, these limitations are considered to be typical of this project type and size.

7.11 Assessment of effects

7.11.1 Introduction

7.11.1.1 The impacts of the construction phase of the onshore and intertidal elements of the Transmission Assets on traffic and transport receptors have been assessed. The impacts arising from the construction phase of the onshore and intertidal elements of the Transmission Assets are listed in **Table 7.13** and the maximum design scenario in **Table 7.17** against which each impact has been assessed.

7.11.1.2 **Table 7.17** sets out the impacts of the operation and maintenance and decommissioning phases of onshore and intertidal elements of the Transmission Assets that have been scoped out of the assessment.

7.11.1.3 A description of the potential effect on traffic and transport receptors caused by each identified impact is given below.

7.11.2 Delimiting the extent of assessment of transport environmental impacts

7.11.2.1 In accordance with the IEMA guidelines, the peak daily construction vehicle movements for the Onshore Infrastructure Area and Intertidal Infrastructure Area are assessed against the baseline traffic flows in **Table 7.21.**

Table 7.21: Impact of onshore and intertidal elements of the Transmission Assets peak daily construction traffic flows

Link Reference	2027 Base Traffic Flows		Construction Traffic Flows		% Increase	
	Total Vehicles	HVs	Total Vehicles	HVs	Total Vehicles	HVs
L1: A584 between Waterloo Road and Squires Gate Lane	10,410	132	70	0	1%	0%
L2: Waterloo Road between A585 and B5262 roundabout	2,227	151	312	0	14%	0%
L3: A5073 Waterloo Road between B5262 roundabout and B5261	10,557	57	312	0	3%	0%
L4: B5262 between A5073 Waterloo Road and A5230 Squires Gate Lane	8,056	32	70	0	1%	0%
L5: B5261 between A5073 Waterloo Road and A5230 Squires Gate Lane	9,041	86	89	0	1%	0%
L6: A5073 Waterloo Road between B5261 roundabout and Preston New Road	13,795	184	329	0	2%	0%
L7: A583 between B5390 and M55 J4	23,902	519	356	0	1%	0%
L9: A5230 Squires Gate Lane between A584 Clifton Drive N and Westgate Road	14,321	381	168	47	1%	12%
Link 10: Westgate Road	925	0	0	0	0%	0%
Link 11: A5230 Squires Gate Lane between Westgate Road and Amy Johnson Way	16,143	284	171	47	1%	17%
Link 12: Amy Johnson Way	18,484	826	0	0	0%	0%
Link 13: A5230 Squires Gate Lane between Amy Johnson Way and B5261	15,899	533	175	47	1%	9%
Link 14: A5230 Progress Way between B5261 and Ashworth Road Roundabout	18,223	1,060	414	198	2%	19%
Link 16: A5230 Progress Way between Ashworth Road roundabout and M55 J4	32,790	1,229	629	198	2%	16%
Link 17: A584 Clifton Drive North between A5230 Squires Gate Lane and North Beach Car Park	19,886	245	177	47	1%	19%
Link 18: Highbury Road West between A584 and St Anne's Old Links Golf Club	5,240	32	0	0	0%	0%

Link Reference	2027 Base Traffic Flows		Construction Traffic Flows		% Increase	
	Total Vehicles	HVs	Total Vehicles	HVs	Total Vehicles	HVs
Link 19: A584 Clifton Drive North between North Beach Car Park and Saltcotes Road	13,124	101	140	0	1%	0%
Link 20a: B5261 Queensway between A5230 Waterloo Road and accesses A7 / A8	11,649	196	407	186	3%	95%
Link 20b: B5261 Queensway between accesses A7 / A8 and Kilnhouse Lane	11,649	196	269	107	2%	55%
Link 22a: Kilnhouse Lane from B5261 Queensway and Blackpool Road North junction	7,792	171	275	107	4%	63%
Link 22b: Blackpool Road North from Kilnhouse Lane junction and access A5	1,744	6	271	107	16%	1740%
Link 23: B5261 Heyhouses Lane between Blackpool Road North and B5410 junction	16,374	300	80	0	0%	0%
Link 24: B5261 Heyhouses Lane between B5410 junction and A584 Clifton Drive	19,334	162	78	0	0%	0%
Link 25: B5410 Lytham St Annes Way between B5261 Heyhouses Lane junction and Moss Hall Lane	9,770	82	50	0	1%	0%
Link 26: B5410 from Moss Hall Lane and roundabout with School Road	9,770	82	71	21	1%	26%
Link 28: B5410 Lytham St Annes Way between roundabout with School Road and Preston New Road roundabout	12,744	129	71	21	1%	16%
Link 29: A583 Preston New Road between B5410 Lytham St Annes Way roundabout and M55 J4 roundabout	25,865	323	367	55	1%	17%
Link 30: Peel Road between Ballam Road and Preston New Road	1,545	10	84	0	5%	0%
Link 31a: Ballam Road between Peel Road and accesses A16/ A19	3,209	11	97	38	3%	345%
Link 31b: Ballam Road between accesses A16 / A19 and A584 East Beach	3,209	11	60	0	2%	0%

Link Reference	2027 Base Traffic Flows		Construction Traffic Flows		% Increase	
	Total Vehicles	HVs	Total Vehicles	HVs	Total Vehicles	HVs
Link 37: Saltcotes Road between A584 Preston Road and accesses A25 / A28	5,323	64	50	0	1%	0%
Link 39a: B5259 Saltcotes Road between B5260 Station Road and Corka Lane Access	4,687	63	73	23	2%	36%
L39b: B5259 Saltcotes Road between Corka Lane Access and A25 / A26.	4,687	63	63	13	1%	21%
Link 41: Ballam Road between Peel Road and Fox Lane Ends	2,135	16	218	105	10%	656%
Link 42: A583 Preston New Road between B5410 Lytham St Annes Way roundabout and Fox Lane Ends	11,545	156	317	34	3%	22%
Link 43a: B5260 Fox Lane Ends between A583 Preston New Road and Ballam Road	5,909	56	336	172	6%	305%
Link 43b: B526 Fox Lane Ends between Ballam Road and B5259 Ribby Road roundabout	5,909	56	209	108	4%	192%
Link 45: B5259 Ribby Road between B5260 Station Road mini roundabout and A583 Blackpool Road	8,268	90	138	0	2%	0%
Link 46: Bryning Lane between B5260 Station Road roundabout and accesses A34 / A37	7,482	107	283	110	4%	103%
Link 47: Bryning Lane between accesses A34 / A37 and A584 Lytham Road	5,268	101	67	0	1%	0%
Link 49: A584 Preston Road between Saltcotes Road and Church Road	15,991	302	130	0	1%	0%
Link 50: A583 Blackpool Road between Fox Lane Ends and A585 roundabout	10,875	304	414	143	4%	47%
Link 51: A585 between A583 Blackpool Road and J3 of M55	16,269	352	454	214	3%	61%
Link 52: A583 Blackpool Road between A585 and Kirkham Road	13,678	273	374	117	3%	43%

Link Reference	2027 Base Traffic Flows		Construction Traffic Flows		% Increase	
	Total Vehicles	HVs	Total Vehicles	HVs	Total Vehicles	HVs
Link 53: Kirkham Road between A583 Kirkham Bypass and access A42 / A43	7,509	90	224	60	3%	67%
Link 54: Kirkham Road between access A52 / A53 and A584 Preston New Road	4,444	52	137	0	3%	0%
Link 55: A584 Preston New Road between Church Road and Kirkham Road	15,191	140	141	0	1%	0%
Link 57a: A584 Preston New Road between accesses A48 / Morecambe substation access and A49	14,190	241	404	209	3%	87%
Link 57b: A584 Preston New Road between Kirkham Road and access A48	14,190	241	404	209	3%	87%
Link 58a: A584 Preston New Road between A583 Blackpool Road and access A51	14,469	418	404	209	3%	50%
Link 58b: A584 Preston New Road between accesses A49 / A51	14,469	418	404	209	3%	50%
Link 61a: A583 Kirkham Bypass between Freckleton/Kirkham Road and access Morgan substation access.	11,302	116	278	88	2%	76%
Link 61b: A583 Kirkham Bypass between Morgan substation access and access A50	11,302	116	279	88	2%	76%
Link 61c: A583 Kirkham Bypass between access A50 and accesses A52 / A53	11,302	116	278	88	2%	76%
Link 61d: A583 Kirkham Bypass between accesses A52 / A53 and Preston New Road	11,302	116	278	88	2%	76%
Link 63: Lodge Lane between accesses A55 and A583	2,140	23	66	16	3%	72%
Link 65a: A583 Blackpool Road between Preston New Road and access A56	25,163	660	551	290	2%	44%
Link 65b: A583 Blackpool Road between accesses A56 / A57	25,163	660	551	290	2%	44%

Link Reference	2027 Base Traffic Flows		Construction Traffic Flows		% Increase	
	Total Vehicles	HVs	Total Vehicles	HVs	Total Vehicles	HVs
Link 65c: A583 Blackpool Road between access A57 and Preston Western Distributor	25,163	660	539	290	2%	44%
Link 67: Preston Western Distributor Road between A583 and Cottom Link Road	13,880	990	469	313	3%	32%
Link 68: Preston Western Distributor Road between Cottom Link Road and East-West Link Road	16,890	1,156	467	313	3%	27%
Link 69: William Young Way between A582 Edith Rigby Way and Sandy Lane	4,724	67	51	0	1%	0%
Link 70: Preston Western Distributor Road between East-West Link Road and M55 J2	16,473	1,163	466	313	3%	27%
Link 71: A585 Riverways between Preston Western Distributor and Nelson Way	20,866	704	405	101	2%	14%
Link 72: Nelson Way from A583 Riversway to access A58	4,015	205	288	101	7%	49%
Link 73: M55 between M6 J32 and M55 J1	70,425	4,683	972	568	1%	12%
Link 74: M55 between J1 (A6) and J2 (Preston Western Distributor)	72,919	7,511	995	568	1%	8%
Link 75: M55 between J2 (Preston Western Distributor) and J3 (A585)	66,062	4,360	662	345	1%	8%
Link 76: M55 between J3 (A585) and J4 (Preston New Road)	46,650	2,566	364	151	1%	6%
Link 77: M6 (north of M55 junction)	73,948	11,758	469	445	1%	4%
Link 78: M6 between J32 and J31A	131,149	16,262	1,088	668	1%	4%
Link 79: M6 between J31A and J31	153,933	21,560	1,090	668	1%	3%
Link 80: M6 between J31 and J30	159,200	21,898	1,075	668	1%	3%
Link 81: M61 between M6 J30 and M61 J9 (M65 junction)	75,170	8,227	918	668	1%	8%
Link 82: M65 east of J2 (M61 junction)	65,476	7,353	541	445	1%	6%
Link 83: M61 south of M61 J9 (M65 junction)	69,830	7,010	582	445	1%	6%

Link Reference	2027 Base Traffic Flows		Construction Traffic Flows		% Increase	
	Total Vehicles	HVs	Total Vehicles	HVs	Total Vehicles	HVs
Link 84: M65 between M61 J9 and M6 J29	53,056	5,734	231	143	0%	2%
Link 85: M6 between M6 J30 (M61 junction) and A6 junction	83,957	13,307	874	668	1%	5%
Link 87: M6 south of J29 (M65 junction)	100,391	15,711	538	445	1%	3%
Link 90: A6 north of A582 roundabout *	-	-	-	-	-	-
Link 91: A6 between M65 roundabout and A582 roundabout	40,896	2,308	333	143	1%	6%
Link 92: A582 Lostock Lane between B5254 Watkin Lane roundabout and A6 roundabout	31,412	2,156	333	143	1%	7%
Link 93: A582 Farrington Road between B5254 Watkin Lane junction and Croston Road junction	25,527	1,179	333	143	1%	12%
Link 94: A582 Flensburg Way	22,086	804	335	143	2%	18%
Link 95: A582 Penwortham Way between Flensburg Way roundabout and Chain House Lane junction	22,939	559	342	143	1%	26%
Link 96: A582 Penwortham Way between Chain House Lane junction and Pope Lane	19,503	462	343	143	2%	31%
Link 97: A582 Penwortham Way between Pope Lane and A59 junction	18,483	663	343	143	2%	22%
Link 98: A59 John Horrocks Way between A582 roundabout and Liverpool Road junction	17,582	1,051	353	143	2%	14%
Link 99: A59 south west of Liverpool Road junction to Stanley Avenue roundabout	23,029	657	392	143	2%	22%
Link 100: Liverpool Road between A59 junction and Howick Cross Lane access	10,224	45	243	79	2%	175%
Link 101: Howick Cross Lane between Liverpool Road and Penwortham substation access	1,034	13	189	79	18%	593%
Link 102: Leach Lane N / Appealing Lane / The Hamlet	750	1	24	14	3%	1400%

* No construction traffic flows on this link and so no traffic flow data presented

7.11.2.2 The highway links that exceed their respective rule 1 or rule 2 threshold are set out in **Table 7.22** and are those for which an assessment of effects has been undertaken.

Table 7.22: Highway links for environmental assessment

Link Reference	Sensitivity of Receptor	% Increase	
		Total Vehicles	HVs
Link 20a: B5261 Queensway between A5230 Waterloo Road and accesses A7 / A8	Medium	3%	95%
Link 20b: B5261 Queensway between accesses A7 / A8 and Kilnhouse Lane	Low	2%	55%
Link 22a: Kilnhouse Lane from B5261 Queensway and Blackpool Road North junction	Medium	4%	63%
Link 22b: Blackpool Road North from Kilnhouse Lane junction and access A5	High	16%	1740%
Link 31a: Ballam Road between Peel Road and accesses A16 and A19	Low	3%	345%
Link 39a: B5259 Saltcotes Road between B5260 Station Road and Corka Lane Access	High	2%	36%
Link 41: Ballam Road between Peel Road and Fox Lane Ends	Low	10%	656%
Link 43a: B5260 Fox Lane Ends between A583 Preston New Road and Ballam Road	Negligible	6%	305%
Link 43b: B526 Fox Lane Ends between Ballam Road and B5259 Ribby Road roundabout	High	4%	192%
Link 46: Bryning Lane between B5260 Station Road roundabout and accesses A34 / A37	High	4%	103%
Link 50: A583 Blackpool Road between Fox Lane Ends and A585 roundabout	Medium	4%	47%
Link 51: A585 between A583 Blackpool Road and J3 of M55	Low	3%	61%
Link 52: A583 Blackpool Road between A585 and Kirkham Road	Low	3%	43%
Link 53: Kirkham Road between A583 Kirkham Bypass and access A42 / A43	Medium	3%	67%
Link 57a: A584 Preston New Road between accesses A48 / Morecambe substation access and A49	Low	3%	87%
Link 57b: A584 Preston New Road between Kirkham Road and access A48	Low	3%	87%
Link 58a: A584 Preston New Road between A583 Blackpool Road and access A51	Negligible	3%	50%
Link 58b: A584 Preston New Road between accesses A49 / A51	Low	3%	50%
Link 61a: A583 Kirkham Bypass between Freckleton/Kirkham Road and access Morgan substation access.	Negligible	2%	76%

Link Reference	Sensitivity of Receptor	% Increase	
		Total Vehicles	HVs
Link 61b: A583 Kirkham Bypass between Morgan substation access and access A50	Low	2%	76%
Link 61c: A583 Kirkham Bypass between access A50 and accesses A52 / A53	Low	2%	76%
Link 61d: A583 Kirkham Bypass between accesses A52 / A53 and Preston New Road	Negligible	2%	76%
Link 63: Lodge Lane between accesses A55 and A583	Low	3%	72%
Link 65a: A583 Blackpool Road between Preston New Road and access A56	Low	2%	44%
Link 65b: A583 Blackpool Road between accesses A56 / A57	Low	2%	44%
Link 65c: A583 Blackpool Road between access A57 and Preston Western Distributor	Low	2%	44%
Link 67: Preston Western Distributor Road between A583 and Cottom Link Road	Negligible	3%	32%
Link 72: Nelson Way from A583 Riversway to access A58	Low	7%	49%
Link 96: A582 Penwortham Way between Chain House Lane junction and Pope Lane	Low	2%	31%
Link 100: Liverpool Road between A59 junction and Howick Cross Lane access	Low	2%	175%
Link 101: Howick Cross Lane between Liverpool Road and Penwortham substation access	Medium	18%	593%
Link 102: Leach Lane N / Appealing Lane / The Hamlet	High	3%	1400%

7.11.2.3 **Table 7.22** sets out that 32 highway links (20a, 20b, 22a, 22b, 31a, 39a, 41, 43a, 43b, 46, 50, 51, 52, 53, 57a, 57b, 58a, 58b, 61a, 61b, 61c, 61d, 63, 65a, 65b, 65c, 67, 72, 96, 100, 101, and 102) exceed their respective rule 1 or rule 2 threshold and have been assessed to determine their significance of effect.

7.11.2.4 In terms of the other highway links (all highway links save for those in **Table 7.22**), in accordance with the IEMA guidelines, these would have changes in traffic flows that would create no discernible environmental impact. Therefore, the effect on these will be of **negligible adverse** significance, which is not significant.

7.11.2.5 In terms of driver delay, road safety and AILs, these form part of the transport assessment and the impacts upon each of these are assessed throughout the entire traffic and transport study area and not only those links set out in **Table 7.22** above.

7.11.2.6 The impact on driver delays caused by construction works or construction traffic (including temporary delays to public transport services as part of that driver delay)

7.11.2.7 Driver delays during the construction phase can result from the following:

- an increase in the traffic flows, particularly during peak hours resulting in increased queues at junctions and on links;
- the passage of slow-moving vehicles such as AILs; and
- reduction in highway capacity resulting from changes in carriageway width or other highway characteristics.

7.11.2.8 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 which 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.

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

7.11.2.10 In order to determine key junctions and locations within the study area for assessment of driver delay within this chapter, the relevant highway authorities have been consulted. As set out in **Table 7.4**, the highway authorities have advised the following locations as being sensitive to changes in traffic flows in relation to driver delay:

- the triangle of the M6, M61 and M65; and
- the M6-M55 link at junction 32.

7.11.2.11 As presented in **Table 7.19** the assessment of driver delay incorporates analysis as part of a transport assessment where a review of the change in the operation of junctions or parts of the highway during the weekday peak hour periods when the baseline traffic flows are at their highest.

7.11.2.12 Based upon this, and from the comments received from the EWG, an assessment of driver delay has been undertaken with consideration of:

- Driver delay during peak hours at key junctions within the study area as a result of construction traffic consisting of:
  - M55/M6 junction;
  - M6/M61 junction;
  - M61/M65 junction;
  - M6/M65 junction;

- driver delay during peak hours on other links within the study area as a result of construction traffic;
- driver delay caused by the passage of AILs; and
- driver delays caused by open-cut trenching on Leach Lane.

Sensitivity of the receptor

7.11.2.13 Given that National Highways have highlighted two junctions (the triangle of the M6, M61 and M65 and the M6-M55 link at junction 32) as being sensitive to changes in traffic flows, they are considered to be of high vulnerability, high recoverability and high value. The sensitivity of these receptors is therefore, considered to be **high**.

7.11.2.14 The access route used by the AILs would be of a good standard to accommodate the transport delivery vehicles. Any driver delay that may be incurred as a result of the movement of AILs would not necessarily be a static delay, but would be an irregular and infrequent delay and only at the times in which AILs are on the network. The links to be used by AILs are deemed to be of negligible to medium vulnerability, high recoverability, and low to high value. The sensitivity of the receptor is therefore, considered to be **high**.

7.11.2.15 There would be open cut trenching activities on Leach Lane at / near its junction with Blackpool Road North. At this location, Leach Lane provides the only means of access to the northern end of Leach Lane, Appealing Lane, The Hamlet and those roads accessed from these. In this regard, this section of Leach Lane is considered to be of high vulnerability, high recoverability and high value. The sensitivity of the receptor is, therefore, considered to be **high**.

Magnitude of impact

Potential driver delay at identified junctions within the study area

7.11.2.16 To understand the peak hour base traffic flows for the triangle of the M6, M61 and M65 and the M6-M55 link at junction 32, WebTRIS data has been analysed to identify the period of the AM and PM peak hours and the associated peak hour and shoulder peak hour traffic flows. This data has been collated for the links around and forming part of these junctions.

7.11.2.17 Prior to undertaking an assessment of the impact of construction traffic flows during the peak hours, the assessment firstly considers whether the addition of construction traffic flows during the shoulder peak hours (the hours either side of the peak hour) would create a different peak hour. By assessing the peak hour and the shoulder peak hour traffic flows, it can be determined whether the construction traffic flows could adjust hourly traffic flows such that the shoulder peaks become the new peak hours.

7.11.2.18 The peak hour and shoulder peak hour base traffic flows are set out for the AM and PM periods in **Table 7.23** and **Table 7.24** respectively below.

Table 7.23: AM peak hour movements at links surrounding sensitive junctions

AM period (total vehicle movements)					
Junction	**Link**	**Peak hour period**	**Peak hour**	**Shoulder peak hour (-1 hour)**	**Shoulder peak hour (+1 hour)**
M55/M6 Junction	Link 73: M55 between M6 J32 and M55 J1	07:30-08:30	8633	6313	7104
	Link 77: M6 (north of M55 junction)	07:45-08:45	5526	4282	5238
	Link 78: M6 between J32 and J31A	07:45-08:45	14000	12020	11902
M6/M61 Junction	Link 80: M6 between J31 and J30	07:30-08:30	16498	12868	14399
	Link 81: M61 between M6 J30 and M61 J9 (M65 junction)	07:15-08:15	7465	5361	6736
	Link 85: M6 between M6 J30 (M61 junction) and A6 junction	07:30-08:30	9253	6654	7660
M61/M65 Junction	Link 81: M61 between M6 J30 and M61 J9 (M65 junction)	07:15-08:15	7465	5361	6736
	Link 82: M65 east of J2 (M61 junction)	07:30-08:30	9007	6407	7598
	Link 83: M61 south of M61 J9 (M65 junction)	07:15-08:15	6722	5057	6025
	Link 84: M65 between M61 J9 and M6 J29	07:30-08:30	7420	5052	6118
M6/M65 Junction	Link 84: M65 between M61 J9 and M6 J29	07:30-08:30	7420	5052	6118
	Link 85: M6 between M6 J30 (M61 junction) and A6 junction	07:30-08:30	9253	6654	7660
	Link 87: M6 south of J29 (M65 junction)	07:30-08:30	11257	8518	9631

Table 7.24: PM peak hour movements at links surrounding sensitive junctions

PM period (total vehicle movements)					
Junction	**Link**	**Peak hour period**	**Peak hour**	**Shoulder peak hour (-1 hour)**	**Shoulder peak hour (+1 hour)**
M55/M6 Junction	Link 73: M55 between M6 J32 and M55 J1	16:15-17:15	8464	7108	7061
	Link 77: M6 (north of M55 junction)	16:00-17:00	7712	7204	6804
	Link 78: M6 between J32 and J31A	16:30-17:30	12950	11376	10910
M6/M61 Junction	Link 80: M6 between J31 and J30	16:15-17:15	17323	15174	14684
	Link 81: M61 between M6 J30 and M61 J9 (M65 junction)	16:15-17:15	8222	7355	7132
	Link 85: M6 between M6 J30 (M61 junction) and A6 junction	16:30-17:30	9250	8380	6987
M61/M65 Junction	Link 81: M61 between M6 J30 and M61 J9 (M65 junction)	16:15-17:15	8222	7355	7132
	Link 82: M65 east of J2 (M61 junction)	16:30-17:30	8908	7683	6997
	Link 83: M61 south of M61 J9 (M65 junction)	16:15-17:15	7165	6632	6363
	Link 84: M65 between M61 J9 and M6 J29	16:30-17:30	6987	6054	5389
M6/M65 Junction	Link 84: M65 between M61 J9 and M6 J29	16:30-17:30	6987	6054	5389
	Link 85: M6 between M6 J30 (M61 junction) and A6 junction	16:30-17:30	9250	8380	6987
	Link 87: M6 south of J29 (M65 junction)	16:30-17:30	11389	10244	8719

7.11.2.19 The data shows that the network peak hour periods for the junctions considered is 07:30-08:30 in the AM and 16:30-17:30 in the PM.

7.11.2.20 Based on the construction hours of 07:00-19:00, staff will arrive before the AM peak hour and would depart after the PM peak hour. Therefore, the construction vehicles travelling through the junctions during the AM and PM peak hours will be HVs.

7.11.2.21 The data shows that the peak hour traffic flows are far higher than the shoulder peak hour traffic flows. The construction traffic flows set out in Annex 7.5: Construction vehicle trip generation assumptions of the ES are far lower than the difference between the peak hour and shoulder

peak hour traffic flows. Thus, the construction traffic flows would not result in the shoulder peak hours becoming the new peak hour.

7.11.2.22 To consider the impact of construction traffic flows on the junctions during the peak hours, an assessment of the respective peak hour traffic flows has been undertaken.

7.11.2.23 Vehicles would travel to/from the study area throughout the whole 12 hour construction working day. Notwithstanding, the movements during the AM and PM peak hours have been calculated on the basis of only 10 hours; this allows for any hourly variations (albeit any such variations would even themselves out over the whole construction duration) and a reasonable assessment.

7.11.2.24 Based on the above, **Table 7.25** and **Table 7.26** below set out the AM and PM peak hour vehicle movements through each junction for each month of the construction duration (months 1 to 21 shown in **Table 7.25** and months 23 to 42 shown in **Table 7.26**).

Table 7.25: Maximum opposing peak hour construction traffic flows at the merge/diverge/give way points at each junction during months 1-22 of construction

Construction Month																					
Junction	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**
M55 / M6 Junction	17	23	24	11	11	15	26	19	18	24	22	24	26	24	24	26	22	23	23	12	12	28
M6 / M61 Junction	21	29	28	13	13	17	33	26	23	28	26	28	30	27	26	30	27	28	24	13	13	33
M61 / M65 Junction	21	29	28	13	13	17	33	26	23	28	26	28	30	27	26	30	27	28	24	13	13	33
M6 / M65 Junction	21	29	28	13	13	17	33	26	23	28	26	28	30	27	26	30	27	28	24	13	13	33

Table 7.26: Maximum opposing peak hour construction traffic flows at the merge/diverge/give way points at each junction during months 23-42 of construction

Construction Month																				
Junction	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**	**41**	**42**
M55 / M6 Junction	27	25	18	17	18	19	11	10	12	13	12	16	14	12	10	10	8	9	0	0
M6 / M61 Junction	33	32	22	18	20	22	11	10	12	13	12	16	14	12	10	10	8	9	0	0
M61 / M65 Junction	33	32	22	18	20	22	11	10	12	13	12	16	14	12	10	10	8	9	0	0
M6 / M65 Junction	33	32	22	18	20	22	11	10	12	13	12	16	14	12	10	10	8	9	0	0

7.11.2.25 It is generally recognised within the transport planning industry that vehicle movements of less than 30 per hour would create negligible impacts upon highway capacity and the operation of junctions/highways. This includes during the AM and PM peak hours.

7.11.2.26 **Table 7.25** and **Table 7.26** show that there are no occasions during the construction period that there would potentially be more than 30 opposing peak hour vehicle movements at the M55/M6 junction.

7.11.2.27 At the M6/M61 junction, the M61/M65 junction and the M6/M65 junction (i.e., the triangle of the M6, M61 and M65), there are only four occasions (i.e., a total duration of four months), when there would be more than 30 opposing peak hour vehicle movements.

7.11.2.28 The range of movements during these four months is between 32 and 33 opposing peak hour vehicle movements. These therefore only marginally exceed the generally accepted threshold of 30 and only for a four month duration. Furthermore, if the full 12 hour construction period was considered rather than the 10 hour period, these would be 27 and 28 opposing peak hour vehicle movements (i.e., below the generally accepted threshold of 30).

7.11.2.29 It is therefore concluded that the construction traffic flows would not have any noticeable impact upon the operation of the M61/M65 junction or the triangle of the M6, M61 and M65. This is due to the low number of peak hour construction vehicle movements and their temporary nature.

7.11.2.30 The impact in terms of driver delay at key junctions within the study area resulting from construction is predicted to be of local spatial extent, short term duration, intermittent and high reversibility. It is predicted that the impact will affect the receptor directly. The magnitude is therefore considered to be **low adverse**.

Potential driver delay on other highway links within the study area

7.11.2.31 To consider the impact of construction traffic flows on the other parts of the study area during the peak hours, an assessment of the respective peak hour traffic flows has been undertaken.

7.11.2.32 Based on the construction hours of 07:00-19:00, staff will arrive before the AM peak hour and would depart after the PM peak hour (including mobilisation periods). Therefore, the construction vehicles travelling along the links during the AM and PM peak hours will be HVs.

7.11.2.33 These would travel to/from the onshore and intertidal elements of the Transmission Assets throughout the whole 12 hour construction working day. Notwithstanding, the movements during the AM and PM peak hours have been calculated from the traffic flows outlined in Volume 3, Annex 7.5: Construction vehicle trip generation assumptions of the ES on the basis of only 10 hours; this allows for any hourly variations (albeit any such variations would even themselves out over the whole construction duration) and a reasonable assessment.

7.11.2.34 The AM and PM peak hour vehicle movements along each link for each month of the construction duration has been calculated.

7.11.2.35 It is generally recognised within the transport planning industry that vehicle movements of less than 30 per hour would create negligible impacts upon highway capacity and the operation of junctions/ highways. This includes during the AM and PM peak hours.

7.11.2.36 Therefore, the links (and therefore associated junctions) with months where the AM and PM peak hour vehicle movements are higher than 30 vehicles have been identified and are included within **Table 7.27** and **Table 7.28** below. Months 1 to 22 shown are shown in **Table 7.27** and months 23 to 42 are shown in **Table 7.28**.

Table 7.27: Maximum opposing peak hour construction traffic flows along highway links where 30 vehicle per hour threshold is exceeded during months 1-22 of construction

Construction Month																						
Link	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**
L67: A582 Edith Rigby Way from A583 and Avice Pimblett Way	22	30	31	11	10	12	28	23	18	23	18	21	19	18	19	23	22	23	14	8	6	22
L68: A582 Edith Rigby Way from Avice Pimblett Way and William Young Way	22	30	31	11	10	12	28	23	18	23	18	21	19	18	19	23	22	23	14	8	6	22
L70: A582 Edith Rigby Way between William Young Way and M55 J2	22	30	31	11	10	12	28	23	18	23	18	21	19	18	19	23	22	23	14	8	6	22
L78: M6 between J32 and J31A	21	29	28	13	13	17	33	26	23	28	26	28	30	27	26	30	27	28	24	13	13	33
L79: M6 between J31A and J31	21	29	28	13	13	17	33	26	23	28	26	28	30	27	26	30	27	28	24	13	13	33

Table 7.28: Maximum opposing peak hour construction traffic flows along highway links where 30 vehicle per hour threshold is exceeded during months 23-42 of construction

Construction Month																						
Link	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**	**41**	**42**
L67 A582 Edith Rigby Way from A583 and Avice Pimblett Way	22	22	9	9	12	12	5	7	3	3	5	9	8	8	4	4	4	5	0	0
L68: A582 Edith Rigby Way from Avice Pimblett Way and William Young Way	22	22	9	9	12	12	5	7	3	3	5	9	8	8	4	4	4	5	0	0
L70: A582 Edith Rigby Way between William Young Way and M55 J2	22	22	9	9	12	12	5	7	3	3	5	9	8	8	4	4	4	5	0	0
L78: M6 between J32 and J31A	33	32	22	18	20	22	11	10	12	13	12	16	14	12	10	10	8	9	0	0
L79: M6 between J31A and J31	33	32	22	18	20	22	11	10	12	13	12	16	14	12	10	10	8	9	0	0

7.11.2.37 Along link 67, link 68 and link 70 (and associated junctions), there is only one occasion (i.e., a total duration of one month), when there would be more than 30 opposing peak hour vehicle movements. The movements during this month is 31, this only marginally exceeds the generally accepted threshold of 30 and only for a one month duration. Furthermore, if the full 12 hour construction period was considered rather than the 10 hour period, this would be 26 opposing peak hour vehicle movements (i.e., below the generally accepted threshold of 30).

7.11.2.38 Link 78 and link 79 are the M6 between junctions 32 and 31A and between junctions 31A and 31 respectively and as such do not have any opposing traffic flows along them because construction vehicles would not travel through those junctions and would remain on the main line carriageway. However, these links have been included for completeness. There are four occasions (i.e., a total duration of four months), when there would be more than 30 peak hour vehicle movements on each carriageway direction along these links.

7.11.2.39 The range of movements during these four months is between 32 and 33 peak hour vehicle movements along the main line carriageway. These therefore only marginally exceed the generally accepted threshold of 30 and only for a four month duration. Furthermore, if the full 12 hour construction period was considered rather than the 10 hour period, these would be 27 and 28 peak hour vehicle movements along the main line carriageway (i.e. below the generally accepted threshold of 30).

7.11.2.40 It is therefore concluded that the construction traffic flows would not have any noticeable impact upon the operation of any other junctions or links within the study area (i.e. in addition to those junctions identified by the highway authorities). This is due to the low number of peak hour construction vehicle movements and their temporary nature.

7.11.2.41 The impact in terms of driver delay at other junctions within the study area resulting from construction is predicted to be of local spatial extent, short term duration, intermittent and high reversibility. It is predicted that the impact will affect the receptor directly. The magnitude is therefore considered to be **negligible adverse**.

Potential driver delay caused by AILs

7.11.2.42 The movement of the transformer AILs will be of a weight that requires their movement to accord with the DfTs water preferred policy for which the nearest suitable landing facility should be used.

7.11.2.43 Given the proximity of the River Ribble, such a facility may be located along it. Transformers have previously been delivered to Preston Marina on its northern banks and to Priory Park on its southern banks, however, assessments will be required by the appointed heavy haulage contractor post consent to determine whether these locations, or any other along the River Ribble are suitable.

7.11.2.44 If there are no suitable landing facilities along the River Ribble, the transformers may be delivered from elsewhere, possibly via the M6 and M55.

7.11.2.45 The transport of the transformer AILs would necessarily be timed to minimise delays to other road users and would be controlled by the police (using their escort powers) to manage the AILs and other road users accordingly to minimise driver delay.

7.11.2.46 Furthermore, the movement of the large AILs in terms of their route and precise dates and times would be advertised in advance so that other users of the route are forewarned and would be able to plan their own journey accordingly.

7.11.2.47 Smaller AILs transporting cable drums will be an irregular movement but would need to access the onshore cable corridor and 400 kV grid connection cable corridor and would use the defined access routes as set out in Annex 7.5: Construction vehicle trip generation assumptions of the ES.

7.11.2.48 However, such movements would be irregular, would not be a daily occurrence and would be a low number (in the order of approximately 500 over the construction period, equating to approximately three deliveries on average per week over the construction period).

7.11.2.49 Although the movement of cable drums have been classified as AILs, they would be far smaller and far lighter than those transporting the transformers. The cable drums would typically weigh up to 60 tonnes and the appointed heavy haulage contractor would confirm their precise transportation arrangements post consent, however, they are not expected to be significantly larger than a 16.5 m long articulated HGV. Regardless of the weight, if the cable drum deliveries exceed 44 tonnes they would be subject to the relevant bridge and structures analysis, post-consent.

7.11.2.50 The speeds of the cable drum AILs travelling along the highway may on occasion be slower than other vehicles, however, in such any instance they would not be substantially slower and should not be sufficiently slow to result in any noticeable delay to other drivers.

7.11.2.51 In terms of AILs, the impact is predicted to be of local spatial extent, short term duration, intermittent and high reversibility. It is predicted that the impact will affect the receptor directly. The magnitude is therefore considered to be **negligible adverse**.

Potential driver delays caused by open-cut trenching on Leach Lane

7.11.2.52 There would be open cut trenching activities on Leach Lane at its junction with Blackpool Road North. At this location, Leach Lane provides the only means of access to the northern end of Leach Lane, Appealing Lane, The Hamlet and those roads accessed from these.

7.11.2.53 On this basis, the open cut trenching activities on Leach Lane will necessarily need to maintain access (including for emergency services)

to these locations. In this regard, Leach Lane would not therefore be closed to traffic for prolonged durations. Access would be maintained and managed.

7.11.2.54 It is expected that the open cut trenching would be undertaken on a half / half basis. Open cut trenching would be undertaken on approximately one half of Leach Lane with the remainder being open to traffic before switching over to enable open cut trenching on the other half of Leach Lane with the remainder being open to traffic.

7.11.2.55 Because only one lane of traffic would be open, temporary traffic control would be adopted by way of shuttle working, expected by priority control whereby one direction of travel receives priority over the other direction and drivers would self-manage themselves through the works area.

7.11.2.56 This arrangement would be set out in accordance with The Traffic Signs Manual Chapter 8 Traffic Safety Measures and Signs for Road Works and Temporary Situations published by DfT / Highways Agency (now National Highways), Welsh Assembly Government (now Welsh Government), Transport Scotland, Department for Regional Development (now Department for Infrastructure), 2009, to maintain highway safety at all times.

7.11.2.57 Guidance set out in the DfT publication Safety at Street Works and Road Works A Code of Practice, 2013, sets out that in shuttle working arrangements, an absolute minimum lane width of 3.0 m should be maintained with a desirable lane width range of 3.25 m to 3.50 m.

7.11.2.58 Leach Lane is generally 8.5 m to 9.0 m wide at the crossing location and therefore open cut trenching undertaken on a half / half basis would enable the desirable lane width range of 3.25 m to 3.50 m to be maintained at all times.

7.11.2.59 The open cut trenching on Leach Lane is not expected to result in any road closures and would maintain access at all times including for emergency services and for buses.

7.11.2.60 The only delay that would be incurred by drivers would be in the event they have to give way to an oncoming vehicle at the shuttle working arrangement. However, based upon the traffic flows along Leach Lane set out in Volume 3, Annex 7.4 Base traffic flows of the ES, these are low and any such delay to drivers would be negligible.

7.11.2.61 The impact in terms of driver delay caused by open-cut trenching on Leach Lane is predicted to be of local spatial extent, short term duration, intermittent and high reversibility. It is predicted that the impact will affect the receptor directly. The magnitude is therefore considered to be **negligible** adverse.

Significance of the effect

7.11.2.62 In regard to driver delay the sensitivity of the receptors is considered to be **negligible to high** and the magnitude of impact is deemed to be **negligible to low**. The effect will, therefore, be of **negligible adverse** to **minor adverse** significance (minor adverse as opposed to moderate adverse due to the low magnitude of impact being at the lower end of its range, using professional judgement), which is not significant.

7.11.3 The impact on non-motorised delay caused by construction works or construction traffic

7.11.3.1 The IEMA guidelines sets 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.

7.11.3.2 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.

7.11.3.3 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 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.

7.11.3.4 The IEMA guidelines also states that pedestrian delay and severance can be grouped together as an increase in traffic flows is likely to lead to greater increases in delays and states that increases in total traffic flows of 30%, 60% and 90% could result in slight, moderate and substantial changes in severance respectively.

7.11.3.5 In accordance with the IEMA guidelines, these thresholds have been considered to assess the impact on non-motorised delay.

7.11.3.6 **Section 7.11.2** sets out that the open cut trenching on Leach Lane is not expected to result in any road closures and would maintain access at all times. This includes for non-motorised users and there is no requirement to consider non-motorised user delay as a result of the open cut trenching on Leach Lane.

Sensitivity of the receptor

7.11.3.7 In terms of sensitivity of receptor, these range from negligible to high (as set out in **Table 7.22).** The sensitivity of the receptors is deemed to be of negligible to high vulnerability, high recoverability and low to high value. The sensitivity of the receptor is, therefore, considered to be **negligible to high**.

Magnitude of impact

7.11.3.8 The 32 highway links assessed in terms of non-motorised user delay are set out in **Table 7.29** along with their predicted changes in total traffic flows and subsequent magnitude of impacts.

Table 7.29: Summary of magnitude of impacts upon non-motorised user delay

Link	Percentage Increase - Total Vehicle	Magnitude of Impact
L20a	3%	Negligible
L20b	2%	Negligible
L22a	4%	Negligible
L22b	16%	Negligible
L31a	3%	Negligible
L39a	2%	Negligible
L41	10%	Negligible
L43a	6%	Negligible
L43b	4%	Negligible
L46	4%	Negligible
L50	4%	Negligible
L51	3%	Negligible
L52	3%	Negligible
L53	3%	Negligible
L57a	3%	Negligible
L57b	3%	Negligible
L58a	3%	Negligible
L58b	3%	Negligible
L61a	2%	Negligible
L61b	2%	Negligible
L61c	2%	Negligible
L61d	2%	Negligible
L63	3%	Negligble
L65a	2%	Negligible
L65b	2%	Negligible
L65c	2%	Negligible
L67	3%	Negligible
L72	7%	Negligible

Link	Percentage Increase - Total Vehicle	Magnitude of Impact
L96	2%	Negligible
L100	2%	Negligible
L101	18%	Negligible
L102	3%	Negligible

7.11.3.9 In accordance with the IEMA guidelines, the magnitude of impacts on all 32 highway links are all well below the 30% threshold at which a slight (the lowest category) impact could occur upon non-motorised user delay.

7.11.3.10 The impact is predicted to be of local spatial extent, short term duration, intermittent and high reversibility. It is predicted that the impact will affect the receptor directly. Therefore, the overall magnitude of impact is **negligible adverse.**

Significance of the effect

7.11.3.11 Overall, the sensitivity of the receptors is considered to be **negligible to high** and the magnitude of impacts is deemed to be **negligible**. The effect will, therefore, be of **negligible to minor adverse** significance, which is not significant.

7.11.4 The impact on fear and intimidation (non-motorised user amenity) caused by construction works or construction traffic

7.11.4.1 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 comprises fear and intimidation.

7.11.4.2 The IEMA guidelines sets 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 7.30** below.

Table 7.30: 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 (mph) (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

7.11.4.3 A 'total hazard score' is then calculated for each link for traffic flow scenarios. Table 3.2 of 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 7.31** below.

Table 7.31: 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

Sensitivity of Receptor

7.11.4.4 In terms of sensitivity of receptor, these range from negligible to high (as set out in **Table 7.22**). The sensitivity of the receptors is deemed to be of negligible to high vulnerability, high recoverability and low to high value. The sensitivity of the receptor is considered to be **negligible to high**.

Magnitude of Impact

7.11.4.5 **Table 7.32** and **Table 7.33** calculate the level of fear and intimidation for the 2027 baseline traffic flows and the 2027 baseline plus construction traffic flows respectively based upon the IEMA guidelines. **Table 7.34** then calculates the magnitude of impact upon fear and intimidation (non-motorised user amenity).

Table 7.32: Level of fear and intimidation (2027 baseline traffic flows)

Link	Average traffic flow over 18-hour day – all vehicles/hour	Total 18-hour HV flow	Average vehicle speed	Total hazard score	Level of fear and intimidation
L20a	647	196	35	30	Moderate
L20b	647	196	35	30	Moderate

Link	Average traffic flow over 18-hour day – all vehicles/hour	Total 18-hour HV flow	Average vehicle speed	Total hazard score	Level of fear and intimidation
L22a	433	171	27	10	Small
L22b	97	6	27	10	Small
L31a	178	11	41	30	Moderate
L39a	260	63	30	10	Small
L41	119	16	41	30	Moderate
L43a	328	56	33	20	Small
L43b	328	56	33	20	Small
L46	416	107	20	0	Small
L50	604	304	50	40	Moderate
L51	904	352	48	40	Moderate
L52	760	273	45	40	Moderate
L53	417	90	30	10	Small
L57a	788	241	49	40	Moderate
L57b	788	241	49	40	Moderate
L58a	804	418	49	40	Moderate
L58b	804	418	49	40	Moderate
L61a	628	116	41	40	Moderate
L61b	628	116	41	40	Moderate
L61c	628	116	41	40	Moderate
L61d	628	116	41	40	Moderate
L63	119	23	30	10	Small
L65a	1,398	660	43	50	Great
L65b	1,398	660	43	50	Great
L65c	1,398	660	43	50	Great
L67	771	990	45	40	Moderate
L72	223	205	26	10	Small
L96	1,084	462	45	40	Moderate
L100	568	45	28	10	Small
L101	57	13	24	10	Small
L102	42	1	20	10	Small

Table 7.33: Level of fear and intimidation (2027 baseline plus construction traffic flows)

Link	Average traffic flow over 18-hour day – all vehicles/hour	Total 18-hour HV flow	Average vehicle speed	Total hazard score	Level of fear and intimidation
L20a	670	381	35	30	Moderate
L20b	662	303	35	30	Moderate
L22a	448	278	27	10	Small
L22b	112	113	27	10	Small
L31a	184	49	41	30	Moderate
L39a	264	85	30	10	Small
L41	131	121	41	30	Moderate
L43a	347	228	33	20	Small
L43b	340	165	33	20	Small
L46	431	217	20	10	Small
L50	629	447	50	40	Moderate
L51	929	566	48	40	Moderate
L52	781	389	45	40	Moderate
L53	430	150	30	10	Small
L57a	811	450	49	40	Moderate
L57b	811	450	49	40	Moderate
L58a	826	627	49	40	Moderate
L58b	826	627	49	40	Moderate
L61a	643	204	41	40	Moderate
L61b	643	204	41	40	Moderate
L61c	643	204	41	40	Moderate
L61d	643	204	41	40	Moderate
L63	123	39	30	10	Small
L65a	1,429	950	43	50	Great
L65b	1,429	950	43	50	Great
L65c	1,428	950	43	50	Great
L67	797	1,302	45	50	Great
L72	239	306	26	10	Small
L96	1,103	605	45	40	Moderate

Link	Average traffic flow over 18-hour day – all vehicles/hour	Total 18-hour HV flow	Average vehicle speed	Total hazard score	Level of fear and intimidation
L100	581	124	28	10	Small
L101	68	92	24	10	Small
L102	43	15	20	10	Small

Table 7.34: Step change and magnitude of impact upon fear and intimidation

Link	Level of fear and intimidation – 2027 baseline traffic flows	Level of fear and intimidation – 2027 baseline plus construction traffic flows	Step change	Magnitude of impact
L20a	Moderate	Moderate	0	Negligible
L20b	Moderate	Moderate	0	Negligible
L22a	Small	Small	0	Negligible
L22b	Small	Small	0	Negligible
L31a	Moderate	Moderate	0	Negligible
L39a	Small	Small	0	Negligible
L41	Moderate	Moderate	0	Negligible
L43a	Small	Small	0	Negligible
L43b	Small	Small	0	Negligible
L46	Small	Small	0	Negligible
L50	Moderate	Moderate	0	Negligible
L51	Moderate	Moderate	0	Negligible
L52	Moderate	Moderate	0	Negligible
L53	Small	Small	0	Negligible
L57a	Moderate	Moderate	0	Negligible
L57b	Moderate	Moderate	0	Negligible
L58a	Moderate	Moderate	0	Negligible
L58b	Moderate	Moderate	0	Negligible
L61a	Moderate	Moderate	0	Negligible
L61b	Moderate	Moderate	0	Negligible
L61c	Moderate	Moderate	0	Negligible
L61d	Moderate	Moderate	0	Negligible

Link	Level of fear and intimidation – 2027 baseline traffic flows	Level of fear and intimidation – 2027 baseline plus construction traffic flows	Step change	Magnitude of impact
L63	Small	Small	0	Negligible
L65a	Great	Great	0	Negligible
L65b	Great	Great	0	Negligible
L65c	Great	Great	0	Negligible
L67	Moderate	Great	1	Low
L72	Small	Small	0	Negligible
L96	Moderate	Moderate	0	Negligible
L100	Small	Small	0	Negligible
L101	Small	Small	0	Negligible
L102	Small	Small	0	Negligible

7.11.4.6 The assessments show that there are no step changes in the level of fear and intimidation (non-motorised user amenity) and there is therefore a negligible magnitude of impact on any links save for link 67 where one step change is predicted.

7.11.4.7 **Table 7.35** sets out the changes in traffic flows on link 67 and, in accordance with the IEMA guidelines, determines the magnitude of impact to be low.

Table 7.35: Magnitude of impact upon fear and intimidation for link 67

Link	Step change	Total vehicle increase	HV increase	Magnitude of impact
L67	1	26	313	Low

7.11.4.8 The impacts are predicted to be of local spatial extent, short term duration, intermittent and high reversibility. It is predicted that the impacts will affect the receptor directly. The magnitude is therefore, considered to be **negligible to low**.

Significance of the effect

7.11.4.9 Overall, the sensitivity of the receptors is considered to be **negligible to high** and the magnitude of impacts is deemed to be **negligible to low**. The effect will, therefore, be of **negligible to minor adverse** significance, which is not significant.

7.11.5 The impact on severance caused by construction works or construction traffic

7.11.5.1 Severance is only likely to occur on highly trafficked roads and result from the perceived division the road and traffic creates between communities on either side.

7.11.5.2 The IEMA guidelines states that increases in total traffic flows of 30%, 60% and 90% could result in slight, moderate and substantial changes in severance respectively.

7.11.5.3 **Section 7.11.2** sets out that the open cut trenching on Leach Lane is not expected to result in any road closures and that access would be managed to maintain access. This includes for pedestrians and as such there is no requirement to consider severance as a result of the open cut trenching on Leach Lane.

Sensitivity of the receptor

7.11.5.4 In terms of sensitivity of receptor, these range from negligible to high. The sensitivity of the receptors is deemed to be of low to high vulnerability, high recoverability and low to high value. The sensitivity of the receptor is, therefore, considered to be **negligible to high**.

Magnitude of impact

7.11.5.5 The 32 highway links assessed in terms of severance are set out in **Table 7.36** along with their predicted changes in total traffic flows and subsequent magnitude of impacts.

Table 7.36: Magnitude of impact for severance

Link	% Increase – total vehicles	Magnitude of impact
L20a	3%	Negligible
L20b	2%	Negligible
L22a	4%	Negligible
L22b	16%	Negligible
L31a	3%	Negligible
L39a	2%	Negligible
L41	10%	Negligible
L43a	6%	Negligible
L43b	4%	Negligible
L46	4%	Negligible
L50	4%	Negligible
L51	3%	Negligible

Link	% Increase – total vehicles	Magnitude of impact
L52	3%	Negligible
L53	3%	Negligible
L57a	3%	Negligible
L57b	3%	Negligible
L58a	3%	Negligible
L58b	3%	Negligible
L61a	2%	Negligible
L61b	2%	Negligible
L61c	2%	Negligible
L61d	2%	Negligible
L63	3%	Negligible
L65a	2%	Negligible
L65b	2%	Negligible
L65c	2%	Negligible
L67	3%	Negligible
L72	7%	Negligible
L96	2%	Negligible
L100	2%	Negligible
L101	18%	Negligible
L102	3%	Negligible

7.11.5.6 In accordance with the IEMA guidelines, the magnitude of impacts on all 32 highway links are all well below the 30 % threshold at which a slight (the lowest category) impact could occur upon non-motorised user delay.

7.11.5.7 The impact is predicted to be of local spatial extent, short term duration, intermittent and high reversibility. It is predicted that the impact will affect the receptor directly. Therefore, the overall magnitude of impact is **negligible adverse**.

Significance of the effect

7.11.5.8 Overall, the sensitivity of the receptors is considered to be **negligible to high** and the magnitude of impacts is deemed to be **negligible**. The effect will, therefore, be of **negligible to minor adverse** significance, which is not significant.

7.11.6 The impact on road safety caused by construction traffic

7.11.6.1 It is possible to estimate the impact of increased traffic on road safety from existing injury accident records, national statistics and the type and quantity of traffic generated. The assessment of the baseline environment in relation to road safety is set out in **section 7.6** and on Figure 7.4 (see Volume 3, Figures of the ES).

7.11.6.2 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.

7.11.6.3 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 study area, from which key locations for assessment are identified from an analysis of PIAs and advice from highway authorities.

7.11.6.4 In order to determine key locations within the study area for assessment within this chapter, **section 7.6** analysed PIAs and found there were no current road safety concerns within the study area. As set out in **Table 7.4**, the highway authorities have not advised of any particular locations of interest within the study area relating to road safety.

Sensitivity of the receptor

7.11.6.5 An analysis of road safety set out in **section 7.6** identified that there are no road safety issues within the study area.

7.11.6.6 In terms of road safety, all links throughout the study area are deemed to be of negligible to low vulnerability, high recoverability and high value. The sensitivity of the receptor is therefore considered to be **negligible to high**.

Magnitude of impact

7.11.6.7 Analysis of PIA data is set out in **section 7.6** and highlights locations of the highway where there are any clusters of PIAs.

7.11.6.8 The analysis undertaken determined that there were no common contributory factors amongst the PIAs that were attributable to the highway network and the common contributory factor was driver error. The conclusion of this assessment was that there are no road safety issues within the study area.

7.11.6.9 The construction vehicles would not result in significant increases in traffic and the composition of traffic and would not alter the injury accident rates by any noticeable amounts.

7.11.6.10 The construction HGVs would all be routeing through the study area under strict traffic management control via the CTMP (see CoT38 in **Table 7.15**, and warning signage will be used where relevant (for example at access junctions) to alert other drivers of the construction traffic.

7.11.6.11 The impact is predicted to be of local spatial extent, short term duration, intermittent and high reversibility. It is predicted that the impact will affect the receptor directly. The magnitude is therefore, considered to be **low**.

Significance of the effect

7.11.6.12 Overall, the sensitivity of the receptors is considered to be **negligible to high** and the magnitude of impacts is deemed to be **low**. The effect will, therefore, be of **negligible adverse** significance to **minor adverse** significance, which is not significant.

7.11.7 The impact of AILs on the safety of users of the LRN, SRN and other transport receptors

Sensitivity of the receptor

7.11.7.1 The access route used by the AILs would generally need to be of a good standard to accommodate the transport delivery vehicles. The key access routes to the onshore and intertidal elements of the Transmission Assets for AILs are formed of A classification roads which are of a good standard for accommodating such movements.

7.11.7.2 Any restrictions would also necessarily be removed to accommodate the transport delivery vehicles and they would travel under controlled environments.

7.11.7.3 In terms of sensitivity of receptor, these range from negligible to high. The sensitivity of the receptors are deemed to be of negligible to high vulnerability, high recoverability and low to high value. The sensitivity of the receptor is therefore, considered to be **negligible to high**.

Magnitude of impact

7.11.7.4 The AILs are expected to be components that exceed standard load weight and possibly exceed standard width and length.

7.11.7.5 It is expected that some larger AILs would transport transformers to the onshore substations. In addition, smaller AILs will also need access for cable drum deliveries to several points along the onshore cable corridor and 400 kV grid connection cable corridor.

7.11.7.6 Depending on the width, length or weight of the laden 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 would need to be undertaken in accordance with the Road Vehicles (Authorisation of Special Types) Order 2003 (STGO) as set out in the document Consents and licenses required

under other legislation (document reference J27) submitted as part of the application for development consent.

- 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.
- Ensure that the vehicle or vehicle-combination is accompanied during the journey by one or more attendants employed in accordance with Schedule 6.

7.11.7.7 There would be in the order of approximately 500 cable drum deliveries over the construction period for the onshore and intertidal elements of the Transmission Assets in a concurrent scenario, equating to approximately three deliveries on average per week over that period and there would be up to eight transformer deliveries.

7.11.7.8 Each load would be present on the network for a short period of time and standard measures (including traffic management measures) would be applied in accordance with the above notification requirements and the heavy haulage company's insurance requirements in terms of route, timing and method of delivering to minimise delays to other highway users. Where relevant, the police may be notified of AIL movements and if applicable, there would be prior notification to the locality via local newspapers/radio etc so that other users have advance notification and can avoid or re-time their journeys so as to negate any impact.

7.11.7.9 Some AILs may also require escort, as directed by the local police authority or as provided by the haulage contractor. Escorts would not only control the AILs but would 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.

7.11.7.10 Based upon the above, the impact is predicted to be of local spatial extent, short term duration, intermittent and highly reversibility. It is predicted that the impact will affect the receptor directly. The magnitude is therefore considered to be **negligible**.

Significance of the effect

7.11.7.11 Overall, the sensitivity of the receptors is considered to be negligible to high and the magnitude of impact is deemed to be **negligible**. The effect will, therefore, be of **negligible** to minor **adverse** significance, which is not significant.

7.12 Cumulative effect assessment methodology

7.12.1 Introduction

7.12.1.1 The Cumulative Effects Assessment (CEA) takes into account the impact associated with the Transmission Assets 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, Annex 5.5: Cumulative screening matrix and location plan of the ES). 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.

7.12.1.2 Whilst the cumulative projects considered for traffic and transport are grouped into different tiers these have been assessed as one cumulative impact. As set out in **Table 7.37** below the maximum design scenario is greatest when the greatest number of schemes and thus greatest number of cumulative development traffic flows (generated from other projects and plans and the onshore and intertidal elements of the Transmission Assets) are considered.

7.12.1.3 The specific projects, plans and activities scoped into the CEA, are outlined in **Table 7.37**. The selection of projects was based upon those that would generate a material volume of traffic into the study area during the peak construction period of the onshore and intertidal elements of the Transmission Assets (i.e. the period in which the onshore and intertidal elements of the Transmission Assets creates the largest impact).

7.12.1.4 This is based on professional judgement with regards to each sites potential timing for granting of planning consent, discharge of conditions etc, construction period and build out rate, opening year and their change in traffic generation during its build out period to when full occupation may be achieved.

7.12.1.5 These aspects are all considered in the context of the potential for each site to generate a material volume of traffic into the study area during the peak construction period of the onshore and intertidal elements of the Transmission Assets in 2027.

7.12.1.6 If a future year cumulative assessment year beyond 2027 was selected then the following applied.

- Baseline traffic flows would be higher (due to traffic growth), thus diluting the cumulative impact.
- The construction traffic generated by the onshore and intertidal elements of the Transmission Assets would be lower than their peak, thus reducing its impact.
- The traffic flows generated by other projects and plans would be higher as they are built out and thus their impact would be higher.

- The contribution to the cumulative impact from the onshore and intertidal elements of the Transmission Assets would be reduced as a consequence of these factors.
- Thus, a future year CEA in 2027 is selected because that is the period in which the contribution from the onshore and intertidal elements of the Transmission Assets is at its highest and represents a proportionate cumulative assessment.

7.12.1.7 Sites that are not considered to generate a material volume of traffic into the study area during 2027 have been discounted from the CEA. Sites that are considered to generate a material volume of traffic into the study area during 2027 have been included within the CEA.

Table 7.37: List of other projects, plans and activities considered within the CEA

Project/Plan	Status	Distance from the Transmission Assets (nearest point, km)	Description of project/plan	Dates of construction (if applicable)	Dates of operation (if applicable)	Overlap with the Transmission Assets
Tier 1						
Mill Farm Sports Village	Submitted (pending approval)	3.085	Erection of employment building providing a mixture of manufacturing/assembly (class b2) and storage / distribution (class b8), and ancillary offices / showroom area, including car parking and landscaping areas	Assumed 2025/2026/2027 (construction end date unspecified)	Assumed 2026/2027 onwards	Yes
Cowells Farm	Submitted (pending approval)	11.03	Outline planning application (with all matters reserved) for an employment-led mixed use development comprising up to 170,000 sqm of employment floorspace (Use Class B2 / B8), up to 10,000 sqm of C1 Hotels, 5,000 sqm of Class E(b) retail use, and up to 7,500 sqm of Class E(g) office use, with associated car parking, service yards and loading bays, landscaping and associated access across 3 plots of land at Cuerdale, land to the West of Samlesbury, South Ribble together with the demolition of a dwelling	Assumed 2025/2026 (construction end date unspecified)	Assumed 2026/2027 onwards	Yes

7.12.2 Scope of cumulative effects assessment

The impacts identified in **Table 7.38** have been selected as those having the potential to result in the greatest cumulative effect on an identified receptor or receptor group. The cumulative effects presented and assessed in this section have been based on the Project Design Envelope set out in Volume 1, Chapter 3: Project description of the ES as well as the information available on other projects and plans.

Table 7.38: Scope of assessment of cumulative effects

Cumulative effect	Phase[a]			Project(s) considered	Justification
	C	O	D		
The impact of increases in traffic flows as a result of construction traffic upon driver (including public transport) and non-motorised user delay or fear and intimidation (non-motorised user amenity) for users of the LRN and SRN.	✓	û	û	Inclusion of all relevant identified cumulative schemes **Tier 1** • Mill Farm Sports Village • Cowells Farm **Tier 2** • No schemes identified **Tier 3** • No schemes identified	Outcome of the CEA will be greatest when the greatest number of other relevant identified schemes are considered.
The impact of increases in traffic flows as a result of construction traffic upon severance for users of the LRN and SRN.	✓	û	û		
The impact of increases in traffic flows as a result of construction traffic upon road safety for users of the LRN, SRN and other transport receptors.	✓	û	û		

7.13 Cumulative effects assessment

7.13.1 Introduction

7.13.1.1 The estimated traffic generation from the cumulative developments have been taken from their respective transport document submission and are replicated in Volume 3, Annex 7.6 Traffic flows with construction traffic of the ES.

7.13.1.2 A description of the significance of cumulative effects upon traffic and transport receptors arising from each identified impact is given below.

7.13.2 Delimiting the extent of assessment of transport cumulative environmental impacts

7.13.2.1 In accordance with the IEMA guidelines, the cumulative vehicle movements (which include those from the onshore and intertidal elements of the Transmission Assets) are assessed against the 2027 baseline traffic flows in **Table 7.38**.

Table 7.39: Impact of cumulative development peak daily traffic flows.

Link Reference	2027 base traffic flows		Cumulative development traffic flows		% Increase	
	Total Vehicles	HVs	Total Vehicles	HVs	Total Vehicles	HVs
L1: A584 between Waterloo Road and Squires Gate Lane	10,410	132	70	0	1%	0%
L2: Waterloo Road between A585 and B5262 roundabout	2,227	151	312	0	14%	0%
L3: A5073 Waterloo Road between B5262 roundabout and B5261	10,557	57	312	0	3%	0%
L4: B5262 between A5073 Waterloo Road and A5230 Squires Gate Lane	8,056	32	70	0	1%	0%
L5: B5261 between A5073 Waterloo Road and A5230 Squires Gate Lane	9,041	86	89	0	1%	0%
L6: A5073 Waterloo Road between B5261 roundabout and Preston New Road	13,795	184	329	0	2%	0%
L7: A583 between B5390 and M55 J4	23,902	519	356	0	1%	0%
L9: A5230 Squires Gate Lane between A584 Clifton Drive N and Westgate Road	14,321	381	168	47	1%	12%
Link 10: Westgate Road	925	0	0	0	0%	0%
Link 11: A5230 Squires Gate Lane between Westgate Road and Amy Johnson Way	16,143	284	171	47	1%	17%
Link 12: Amy Johnson Way	18,484	826	0	0	0%	0%
Link 13: A5230 Squires Gate Lane between Amy Johnson Way and B5261	15,899	533	175	47	1%	9%
Link 14: A5230 Progress Way between B5261 and Ashworth Road Roundabout	18,223	1,060	414	198	2%	19%

Link Reference	2027 base traffic flows		Cumulative development traffic flows		% Increase	
	Total Vehicles	HVs	Total Vehicles	HVs	Total Vehicles	HVs
Link 16: A5230 Progress Way between Ashworth Road roundabout and M55 J4	32,790	1,229	629	198	2%	16%
Link 17: A584 Clifton Drive North between A5230 Squires Gate Lane and North Beach Car Park	19,886	245	177	47	1%	19%
Link 18: Highbury Road West between A584 and St Anne's Old Links Golf Club	5,240	32	0	0	0%	0%
Link 19: A584 Clifton Drive North between North Beach Car Park and Saltcotes Road	13,124	101	140	0	1%	0%
Link 20a: B5261 Queensway between A5230 Waterloo Road and accesses A7 / A8	11,649	196	407	186	3%	95%
Link 20b: B5261 Queensway between accesses A7 / A8 and Kilnhouse Lane	11,649	196	269	107	2%	55%
Link 22a: Kilnhouse Lane from B5261 Queensway and Blackpool Road North junction	7,792	171	275	107	4%	63%
Link 22b: Blackpool Road North from Kilnhouse Lane junction and access A5	1,744	6	271	107	16%	1740%
Link 23: B5261 Heyhouses Lane between Blackpool Road North and B5410 junction	16,374	300	80	0	0%	0%
Link 24: B5261 Heyhouses Lane between B5410 junction and A584 Clifton Drive	19,334	162	78	0	0%	0%
Link 25: B5410 Lytham St Annes Way between B5261 Heyhouses Lane junction and Moss Hall Lane	9,770	82	50	0	1%	0%
Link 26: B5410 from Moss Hall Lane and roundabout with School Road	9,770	82	71	21	1%	26%

Link Reference	2027 base traffic flows		Cumulative development traffic flows		% Increase	
	Total Vehicles	HVs	Total Vehicles	HVs	Total Vehicles	HVs
Link 28: B5410 Lytham St Annes Way between roundabout with School Road and Preston New Road roundabout	12,744	129	71	21	1%	16%
Link 29: A583 Preston New Road between B5410 Lytham St Annes Way roundabout and M55 J4 roundabout	25,865	323	367	55	1%	17%
Link 30: Peel Road between Ballam Road and Preston New Road	1,545	10	84	0	5%	0%
Link 31a: Ballam Road between Peel Road and accesses A16 / A19	3,209	11	97	38	3%	345%
Link 31b: Ballam Road between accesses A16 /A19 and A584 East Beach	3,209	11	60	0	2%	0%
Link 37: Saltcotes Road between A584 Preston Road and accesses A25 / A28	5,323	64	50	0	1%	0%
Link 39a: B5259 Saltcotes Road between B5260 Station Road and Corka Lane Access	4,687	63	73	23	2%	36%
L39b: B5259 Saltcotes Road between Corka Lane Access and A25 / A26.	4,687	63	63	13	1%	21%
Link 41: Ballam Road between Peel Road and Fox Lane Ends	2,135	16	218	105	10%	656%
Link 42: A583 Preston New Road between B5410 Lytham St Annes Way roundabout and Fox Lane Ends	11,545	156	317	34	3%	22%
Link 43a: B5260 Fox Lane Ends between A583 Preston New Road and Ballam Road	5,909	56	336	172	6%	305%

Link Reference	2027 base traffic flows		Cumulative development traffic flows		% Increase	
	Total Vehicles	HVs	Total Vehicles	HVs	Total Vehicles	HVs
Link 43b: B526 Fox Lane Ends between Ballam Road and B5259 Ribby Road roundabout	5,909	56	209	108	4%	192%
Link 45: B5259 Ribby Road between B5260 Station Road mini roundabout and A583 Blackpool Road	8,268	90	155	0	2%	0%
Link 46: Bryning Lane between B5260 Station Road roundabout and accesses A34 / A37	7,482	107	283	110	4%	103%
Link 47: Bryning Lane between accesses A34 / A37 and A584 Lytham Road	5,268	101	67	0	1%	0%
Link 49: A584 Preston Road between Saltcotes Road and Church Road	15,991	302	130	0	1%	0%
Link 50: A583 Blackpool Road between Fox Lane Ends and A585 roundabout	10,875	304	449	143	4%	47%
Link 51: A585 between A583 Blackpool Road and J3 of M55	16,269	352	1,085	268	7%	76%
Link 52: A583 Blackpool Road between A585 and Kirkham Road	13,678	273	420	117	3%	43%
Link 53: Kirkham Road between A583 Kirkham Bypass and access A42 / A43	7,509	90	224	60	3%	67%
Link 54: Kirkham Road between access A52 / A53 and A584 Preston New Road	4,444	52	137	0	3%	0%
Link 55: A584 Preston New Road between Church Road and Kirkham Road	15,191	140	141	0	1%	0%
Link 57a: A584 Preston New Road between accesses A48 / Morecambe substation access and A49	14,190	241	404	209	3%	87%

Link Reference	2027 base traffic flows		Cumulative development traffic flows		% Increase	
	Total Vehicles	HVs	Total Vehicles	HVs	Total Vehicles	HVs
Link 57b: A584 Preston New Road between Kirkham Road and access A48	14,190	241	404	209	3%	87%
Link 58a: A584 Preston New Road between A583 Blackpool Road and access A51	14,469	418	404	209	3%	50%
Link 58b: A584 Preston New Road between accesses A49 / A51	14,469	418	404	209	3%	50%
Link 61a: A583 Kirkham Bypass between Freckleton/Kirkham Road and access Morgan substation access.	11,302	116	278	88	2%	76%
Link 61b: A583 Kirkham Bypass between Morgan substation access and access A50	11,302	116	279	88	2%	76%
Link 61c: A583 Kirkham Bypass between access A50 and accesses A52 / A53	11,302	116	278	88	2%	76%
Link 61d: A583 Kirkham Bypass between accesses A52 / A53 and Preston New Road	11,302	116	278	88	2%	76%
Link 63: Lodge Lane between accesses A55 and A583	2,140	23	66	16	3%	72%
Link 65a: A583 Blackpool Road between Preston New Road and access A56	25,163	660	551	290	2%	44%
Link 65b: A583 Blackpool Road between accesses A56 / A57	25,163	660	551	290	2%	44%
Link 65c: A583 Blackpool Road between access A57 and Preston Western Distributor	25,163	660	539	290	2%	44%
Link 67: Preston Western Distributor Road between A583 and Cottom Link Road	13,880	990	469	313	3%	32%

Link Reference	2027 base traffic flows		Cumulative development traffic flows		% Increase	
	Total Vehicles	HVs	Total Vehicles	HVs	Total Vehicles	HVs
Link 68: Preston Western Distributor Road between Cottom Link Road and East-West Link Road	16,890	1,156	467	313	3%	27%
Link 69: William Young Way between A582 Edith Rigby Way and Sandy Lane	4,724	67	51	0	1%	0%
Link 70: Preston Western Distributor Road between East-West Link Road and M55 J2	16,473	1,163	466	313	3%	27%
Link 71: A585 Riverways between Preston Western Distributor and Nelson Way	20,866	704	405	101	2%	14%
Link 72: Nelson Way from A583 Riversway to access A58	4,015	205	288	101	7%	49%
Link 73: M55 between M6 J32 and M55 J1	70,425	4,683	972	568	1%	12%
Link 74: M55 between J1 (A6) and J2 (Preston Western Distributor)	72,919	7,511	995	568	1%	8%
Link 75: M55 between J2 (Preston Western Distributor and J3 (A585)	66,062	4,360	860	399	1%	9%
Link 76: M55 between J3 (A585) and J4 (Preston New Road)	46,650	2,566	451	151	1%	6%
Link 77: M6 (north of M55 junction)	73,948	11,758	469	445	1%	4%
Link 78: M6 between J32 and J31A	131,149	16,262	1,925	869	1%	5%
Link 79: M6 between J31A and J31	153,933	21,560	2,153	869	1%	4%
Link 80: M6 between J31 and J30	159,200	21,898	3,721	869	2%	4%
Link 81: M61 between M6 J30 and M61 J9 (M65 junction)	75,170	8,227	918	668	1%	8%

Link Reference	2027 base traffic flows		Cumulative development traffic flows		% Increase	
	Total Vehicles	HVs	Total Vehicles	HVs	Total Vehicles	HVs
Link 82: M65 east of J2 (M61 junction)	65,476	7,353	541	445	1%	6%
Link 83: M61 south of M61 J9 (M65 junction)	69,830	7,010	582	445	1%	6%
Link 84: M65 between M61 J9 and M6 J29	53,056	5,734	231	143	0%	2%
Link 85: M6 between M6 J30 (M61 junction) and A6 junction	83,957	13,307	874	668	1%	5%
Link 87: M6 south of J29 (M65 junction)	100,391	15,711	538	445	1%	3%
Link 90: A6 north of A582 roundabout	-	-	-	-	-	-
Link 91: A6 between M65 roundabout and A582 roundabout	40,896	2,308	333	143	1%	6%
Link 92: A582 Lostock Lane between B5254 Watkin Lane roundabout and A6 roundabout	31,412	2,156	333	143	1%	7%
Link 93: A582 Farrington Road between B5254 Watkin Lane junction and Croston Road junction	25,527	1,179	333	143	1%	12%
Link 94: A582 Flensburg Way	22,086	804	335	143	2%	18%
Link 95: A582 Penwortham Way between Flensburg Way roundabout and Chain House Lane junction	22,939	559	342	143	1%	26%
Link 96: A582 Penwortham Way between Chain House Lane junction and Pope Lane	19,503	462	343	143	2%	31%
Link 97: A582 Penwortham Way between Pope Lane and A59	18,483	663	343	143	2%	22%
Link 98: A59 John Horrocks Way between A582 roundabout and Liverpool Road junction	17,582	1,051	353	143	2%	14%

Link Reference	2027 base traffic flows		Cumulative development traffic flows		% Increase	
	Total Vehicles	HVs	Total Vehicles	HVs	Total Vehicles	HVs
Link 99: A59 south west of Liverpool Road junction to Stanley Avenue roundabout	23,029	657	392	143	2%	22%
Link 100: Liverpool Road between A59 junction and Howick Cross Lane access	10,224	45	243	79	2%	175%
Link 101: Howick Cross Lane between Liverpool Road and Penwortham substation access	1,034	13	189	79	18%	593%
Link 102: Link 57a: A584 Preston New Road between accesses A48 / Morecambe substation access and A49	750	1	24	14	3%	1400%

7.13.2.2 It is noted that the cumulative impacts on all of the links are the same as those assessed for the onshore and intertidal elements of the Transmission Assets in **section 7.11**, except for link 51.

7.13.2.3 On this basis, the assessments undertaken in **section 7.11** cover the CEA for all links except for link 51. A CEA has therefore been undertaken for link 51, which is the A585 between the A583 and the M55 junction 3, as shown in **Table 7.40**.

Table 7.40: Highway links for transport CEA

Link Reference	Sensitivity	% Increase	
		Total Vehicles	HVs
Link 51: A585 between A583 Blackpool Road and J3 of M55	Low	7%	76%

7.13.2.4 In terms of driver delay, **section 7.11.2.6** sets out that assessments were undertaken at the locations identified by the EWG comprising the triangle of the M6, M61 and M65 and the M6-M55 link at junction 32. Link 51 does not form part of those junctions and there would be no additional traffic as part of the CEA to those assessed within **section 7.11.2.** A review of the TAs that supported the planning applications for the other projects and plans that form the CEA set out that their residual impacts would not be material. The cumulative sites would not generate any AILs and considerations in this regard are the same as those set out in **section 7.11**. On this basis, no further CEA is required with respect to driver delay or AILs.

7.13.3 The impact on non-motorised user delay caused by cumulative development traffic

Sensitivity of the receptor

7.13.3.1 Link 51 is considered to be of low sensitivity, with footway provision commensurate with its use and demand. This link is deemed to be of low vulnerability, high recoverability and low value. The sensitivity of the receptor is therefore considered to be **low**.

Magnitude of impact

7.13.3.2 As set out in **Table 7.40**, the daily cumulative development traffic flows would result in an increase of 7 % along link 51. In accordance with the IEMA guidelines, this is less than the 30% threshold upon which a slight (the lowest category) effect upon non-motorised user delay may occur.

7.13.3.3 The cumulative impact is predicted to be of local spatial extent, long term duration, intermittent and high reversibility. It is predicted that the impact will affect the receptor directly. The magnitude is therefore considered to be **negligible.**

Significance of the effect

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

7.13.4 The impact on fear and intimidation (non-motorised user amenity) caused by cumulative development traffic

Sensitivity of the receptor

7.13.4.1 Link 51 is considered to be of low sensitivity, with footway provision commensurate with its use and demand. This link is deemed to be of low vulnerability, high recoverability and low value. The sensitivity of the receptor is therefore considered to be **low**.

Magnitude of impact

7.13.4.2 **Table 7.32** sets out the level of fear and intimidation for the 2027 baseline traffic flows and **Table 7.41** sets this out for the 2027 baseline plus cumulative development traffic flows based upon the IEMA guidelines. **Table 7.42** then calculates the cumulative magnitude of impact upon fear and intimidation (non-motorised user amenity).

Table 7.41: Level of fear and intimidation (2027 baseline plus cumulative development traffic flows)

Link	Average traffic flow over 18-hour day – all vehicles/hour	Total 18-hour HV flow	Average vehicle speed	Total hazard score	Level of fear and intimidation
L51	964	620	48	40	Moderate

Table 7.42: Step change and cumulative magnitude of impact upon fear and intimidation

Link	Level of fear and intimidation – baseline	Level of fear and intimidation – baseline plus cumulative	Step change	Cumulative magnitude of impact
L51	Moderate	Moderate	0	Negligible

7.13.4.3 The assessments show that there are no step changes in the level of fear and intimidation (non-motorised user amenity) and there is therefore a negligible cumulative magnitude of impact on link 51.

7.13.4.4 The cumulative impacts are predicted to be of local spatial extent, long term duration, intermittent and high reversibility. The cumulative magnitude is therefore, considered to be negligible.

Significance of effect

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

7.13.5 The impact on severance caused by cumulative development traffic

Sensitivity of the receptor

7.13.5.1 Link 51 is considered to be of low sensitivity. This link is deemed to be of low vulnerability, high recoverability and low value. The sensitivity of the receptor is therefore considered to be **low**.

Magnitude of impact

7.13.5.2 As set out in **Table 7.40**, the daily cumulative development traffic flows would result in an increase of 7 % along link 51. In accordance with the IEMA guidelines, this is less than the 30 % threshold upon which a slight (the lowest category) effect upon severance may occur.

7.13.5.3 The cumulative impact is predicted to be of local spatial extent, long term duration, intermittent and high reversibility. It is predicted that the impact will affect the receptor directly. The magnitude is therefore considered to be **negligible**.

Significance of the effect

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

7.13.6 The impact on road safety caused by cumulative development traffic

Sensitivity of the receptor

7.13.6.1 An analysis of road safety set out in **section 7.6** identified that there are no road safety issues within the study area. There were no PIA clusters on link 51.

7.13.6.2 In terms of road safety, link 51 is deemed to be of low vulnerability, high recoverability and high value. The sensitivity of the receptor is therefore considered to be **low**.

Magnitude of impact

7.13.6.3 Analysis of PIA data is set out in **section 7.6** and highlights locations of the highway where there are any clusters of PIAs.

7.13.6.4 The analysis undertaken determined that there were no PIA clusters on link 51 and no road safety issues along it.

7.13.6.5 The cumulative development traffic flows would not result in significant increases in traffic or the composition of total traffic flows and would not alter the injury accident rates by any noticeable amounts along link 51.

7.13.6.6 The cumulative impact is predicted to be of local spatial extent, long term duration, intermittent and high reversibility. It is predicted that the cumulative impact will affect the receptor directly. The magnitude is therefore, considered to be **low**.

Significance of the effect

7.13.6.7 Overall, the sensitivity of the receptors is considered to be **low** and the magnitude of the cumulative impact is deemed to be **low**. The cumulative effect will, therefore, be of **negligible** to minor **adverse** significance, which is not significant.

7.14 Transboundary effects

7.14.1.1 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 for the onshore and intertidal elements of the Transmission Assets upon the interests of other states.

7.15 Inter-related effects

7.15.1.1 Inter-relationships are the impacts and associated effects of different aspects of the Transmission Assets 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 Transmission Assets (construction, operation and maintenance, and decommissioning), to interact to potentially create a more significant effect on a receptor group than if just one phase were assessed in isolation.
- Receptor led effects: Assessment of the scope for all relevant effects across multiple topics to interact, spatially and temporally, to create inter-related effects on a receptor.

7.15.1.2 A description of the likely interactive effects arising from the onshore and intertidal elements of the Transmission Assets on traffic and transport receptors is provided in Volume 4, Chapter 3:Inter-relationships of the ES.

7.16 Summary of impacts, mitigation measures and monitoring

7.16.1.1 Information on traffic and transport within the study area was collected through desktop review, site surveys, scoping and consultation.

7.16.1.2 **Table 7.43** presents a summary of the potential impacts, measures adopted as part of the project and residual effects in respect to traffic and transport. The impacts assessed included:

- driver delay including delays to public transport services (as part of that driver delay);
- severance;
- non-motorised user delay;
- fear and intimidation (non-motorised user amenity);
- road safety; and
- AILs

7.16.1.3 Overall, it is concluded that there will be no significant effects or cumulative significant effects arising from the onshore and intertidal elements of the Transmission Assets during the construction, operations and maintenance or decommissioning phases.

7.16.1.4 No transboundary impacts have been identified.

7.16.1.5 There is potential for inter-related effects from transport with noise and vibration (Volume 3, Chapter 8: Noise and vibration of the ES), air quality (Volume 3, Chapter 9: Air quality of the ES) and human health (Volume 1, Annex 5.1: Human health of the ES). The construction phase has the highest likelihood of receptor-led effects. However, these effects would be managed through measures set out in the CoCP. Further details of inter-related effects are provided in Volume 4, Chapter 3: Inter-relationships of the ES.

Table 7.43: Summary of environmental effects, mitigation and monitoring

Description of impact	Phase[a]			Commitment number	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Proposed monitoring
	C	O	D							
The impact on driver delay (including temporary delays to public transport services) caused by construction works or construction traffic using the LRN and SRN.	✓	×	×	CoT02, CoT18, CoT23, CoT24, CoT35, CoT38.	C: negligible to low.	C: negligible to high	C: negligible to minor adverse	n/a	C: negligible to minor adverse	CoT38. An Outline CTMP (document reference J5) is submitted with the application for development consent. CTMP(s) will be developed in accordance with the Outline CTMP prior to construction.
The impact on non-motorised user delay caused by construction works or construction traffic using the LRN and SRN.	✓	×	×	CoT02, CoT18, CoT23, CoT24, CoT35, CoT38.	C: negligible	C: negligible to high	C: Negligible to minor adverse	n/a	C: Negligible to minor adverse	CoT38. An Outline CTMP (document reference J5) is submitted with the application for development consent. CTMP(s) will be developed in accordance with the Outline CTMP prior to construction.
The impact on fear and intimidation (non-motorised user amenity) caused by construction works or construction traffic using the LRN and SRN.	✓	×	×	CoT02, CoT18, CoT23, CoT24, CoT35, CoT38.	C: negligible to low	C: negligible to high	C: negligible to minor adverse	n/a	C: negligible to minor adverse	CoT38. An Outline CTMP (document reference J5) is submitted with the application for development consent. CTMP(s) will be developed in accordance with the

Description of impact	Phase[a]			Commitment number	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Proposed monitoring
	C	O	D							
										outline CTMP prior to construction.
The impact on severance caused by construction works or construction traffic.	✓	×	×	CoT02, CoT18, CoT23, CoT24, CoT35, CoT38.	C: negligible	C: negligible to high	C: negligible to minor adverse	n/a	C: negligible to minor adverse	CoT38. An Outline CTMP (document reference J5) is submitted with the application for development consent. CTMP(s) will be developed in accordance with the outline CTMP prior to construction.
The impact on road safety caused by construction traffic	✓	×	×	CoT02, CoT18, CoT23, CoT24, CoT35, CoT38.	C: low	C: negligible to high	C: negligible to minor adverse	n/a	C: negligible to minor adverse	CoT38. An Outline CTMP (document reference J5) is submitted with the application for development consent. CTMP(s) will be developed in accordance with the outline CTMP prior to construction.

[a] C=construction, O=operation and maintenance, D=decommissioning, TBC = to be confirmed

Table 7.44: Summary of cumulative environmental effects, mitigation and monitoring

Description of effect	Phase[a]			Commitment number	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Proposed monitoring
	C	O	D							
Tier 1, Tier 2 and Tier 3										
The cumulative impact on non-motorised user delay caused by cumulative traffic using the LRN and SRN.	✓	×	×	CoT02, CoT18, CoT23, CoT24, CoT35, CoT38.	C: negligible	C: Low	C: Negligible adverse	n/a	C: Negligible adverse	CoT38. An Outline CTMP (document reference J5) is submitted with the application for development consent. CTMP(s) will be developed in accordance with the Outline CTMP prior to construction.
The cumulative impact on fear and intimidation (non-motorised user amenity) caused by cumulative traffic using the LRN and SRN.	✓	×	×	CoT02, CoT18, CoT23, CoT24, CoT35, CoT38.	C: negligible	C: low	C: negligible adverse	n/a	C: negligible adverse	CoT38. An Outline CTMP (document reference J5) is submitted with the application for development consent. CTMP(s) will be developed in accordance with the outline CTMP prior to construction.
The cumulative impact on severance caused by cumulative traffic.	✓	×	×	CoT02, CoT18, CoT23, CoT24, CoT35, CoT38.	C: negligible	C: low	C: negligible adverse	n/a	C: negligible adverse	CoT38. An Outline CTMP (document reference J5) is submitted with the application for development consent. CTMP(s) will be developed in accordance with the outline CTMP prior to construction.
The cumulative impact on road safety caused by cumulative traffic	✓	×	×	CoT02, CoT18, CoT23, CoT24, CoT35, CoT38.	C: low	C: low	C: negligible to minor adverse	n/a	C: negligible to minor adverse	CoT38. An Outline CTMP (document reference J5) is submitted with the application for development consent. CTMP(s) will be developed in accordance with the outline CTMP prior to construction.

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

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