DOGGER BANK D
WIND FARM

Preliminary Environmental Information Report

Volume 1

Chapter 26 Traffic and Transport

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Table of Contents

List of Appendices

Glossary

Term	Definition
Additional Mitigation	Measures identified through the EIA process that are required as further action to avoid, prevent, reduce or, if possible, offset likely significant adverse effects to acceptable levels (also known as secondary (foreseeable) mitigation). All additional mitigation measures adopted by the Project are provided in the Commitments Register.
Birkhill Wood Substation	The onshore grid connection point for DBD identified through the Holistic Network Design process. Birkhill Wood Substation which is being developed by National Grid Electricity Transmission and does not form part of the Project.
Commitment	Refers to any embedded mitigation and additional mitigation, enhancement or monitoring measures identified through the EIA process and those identified outside the EIA process such as through stakeholder engagement and design evolution. All commitments adopted by the Project are provided in the Commitments Register.
Design	All of the decisions that shape a development throughout its design and pre-construction, construction / commissioning, operation and, where relevant, decommissioning phases.
Development Consent Order (DCO)	A consent required under Section 37 of the Planning Act 2008 to authorise the development of a Nationally Significant Infrastructure Project, which is granted by the relevant Secretary of State following an application to the Planning Inspectorate.
Effect	An effect is the consequence of an impact when considered in combination with the receptor's sensitivity / value / importance, defined in terms of significance.
Embedded Mitigation	Embedded mitigation includes: • Measures that form an inherent part of the project design evolution such as modifications to the location or design of the development made during the pre-application phase (also known as primary (inherent) mitigation); and • Measures that will occur regardless of the EIA process as they are imposed by other existing legislative requirements or are considered as standard or best practice to manage commonly occurring environmental impacts (also known as tertiary (inexorable) mitigation). All embedded mitigation measures adopted by the Project are provided in the Commitments Register.
Energy Storage and Balancing Infrastructure (ESBI)	A range of technologies such as battery banks to be co-located with the Onshore Converter Station, which provide valuable services to the electrical grid such as storing energy to meet periods of peak demand and improving overall reliability.
Enhancement	Measures committed to by the Project to create or enhance positive benefits to the environment or communities, as a result of the Project.
	All enhancement measures adopted by the Project are provided in the Commitments Register.
Environmental Impact Assessment (EIA)	A process by which certain planned projects must be assessed before a formal decision to proceed can be made. It involves the collection and consideration of environmental information and includes the publication of an Environmental Statement.
Environmental Statement (ES)	A document reporting the findings of the EIA which describes the measures proposed to mitigate any likely significant effects.
Evidence Plan Process (EPP)	A voluntary consultation process with technical stakeholders which includes a Steering Group and Expert Topic Group (ETG) meetings to encourage upfront agreement on the nature, volume and range of supporting evidence required to inform the EIA and HRA process.
Expert Topic Group (ETG)	A forum for targeted technical engagement with relevant stakeholders through the EPP.
Grid Connection	The offshore and onshore electricity transmission network connection to Birkhill Wood Substation.
Haul Roads	Temporary tracks set aside to facilitate transport access during onshore construction works.
Heavy Vehicles (HV)	HV is the term for any vehicle with a Gross Weight over 3.5 tonnes. This is also used as a proxy for HGVs and buses / coaches recognizing the similar size and environmental characteristics of the respective vehicle types. The terms HV and HGV can be used interchangeably.
Heavy Goods Vehicles (HGV)	Heavy Goods Vehicles (HGV) is the term for a commercial vehicle with a gross vehicle weight over 3.5 tonnes. Typically, on a construction project this would entail the use of tippers, articulated lorries and concrete mixer trucks. The terms HV and HGV can be used interchangeably.
Impact	A change resulting from an activity associated with the Project, defined in terms of magnitude.
Jointing Bays	Underground structures constructed at regular intervals along the onshore export cable corridor to facilitate the joining of discrete lengths of the installation of cables.
Landfall	The area on the coastline, south-east of Skipsea, at which the offshore export cables are brought ashore, connecting to the onshore export cables at the transition joint bay above Mean High Water Springs.

Term	Definition
Light Vehicles (LV)	The range of vehicles that would be used by construction employees, i.e. cars, vans, pick-ups, minibuses, etc.
Link Boxes	Structures housing electrical equipment located alongside the jointing bays in the onshore export cable corridor and the transition joint bay at the landfall, which could be located above or below ground.
Mitigation	Any action or process designed to avoid, prevent, reduce or, if possible, offset potentially significant adverse effects of a development. All mitigation measures adopted by the Project are provided in the Commitments Register.
Mitigation Hierarchy	A systematic approach to guide decision-making and prioritise mitigation design. The hierarchy comprises four stages in order of preference and effectiveness: avoid, prevent, reduce and offset.
Monitoring	Measures to ensure the systematic and ongoing collection, analysis and evaluation of data related to the implementation and performance of a development. Monitoring can be undertaken to monitor conditions in the future to verify any environmental effects identified by the EIA, the effectiveness of mitigation or enhancement measures or ensure remedial action are taken should adverse effects above a set threshold occur. All monitoring measures adopted by the Project are provided in the Commitments Register.
Movement	A single trip (i.e. the arrival or departure from site) for the transfer of employees or delivery of goods.
Offshore Construction Base Port(s)	The offshore construction base port(s) will be the home for the Project's service vessels, crew transfers and the control centre for managing marine logistics and traffic for offshore construction activities. At this stage, no decision has been made regarding which port(s) would be used for the Project's offshore construction. A decision upon the offshore construction base port(s) would not be made until post DCO determination.
Onshore Converter Station (OCS) Zone	The area within which the Onshore Converter Station and Energy Storage and Balancing Infrastructure will be located in vicinity of Birkhill Wood Substation.
Onshore Converter Station (OCS)	A compound containing electrical equipment required to stabilise and convert electricity generated by the wind turbines and transmitted by the export cables into a more suitable voltage for grid connection into Birkhill Wood Substation.
Onshore Development Area	The area in which all onshore infrastructure associated with the Project will be located, including any temporary works area required during construction and permanent land required for mitigation and enhancement areas, which extends landward of Mean Low Water Springs. There is an overlap with the Offshore Development Area in the intertidal zone.

Term	Definition
Onshore Export Cable Corridor (ECC)	The area within which the onshore export cables will be located, extending from the landfall to the Onshore Converter Station zone and onwards to Birkhill Wood Substation.
Operation and Maintenance Base Port	The operation and maintenance (O&M) base port will be the home for the Project's service vessels, crew transfers and the control centre for managing marine logistics and traffic for offshore O&M activities. At this stage, no decision has been made regarding which port(s) would be used for the Project's offshore O&M activities. A decision upon an O&M base port would not be made until post DCO determination.
Scoping Opinion	A written opinion issued by the Planning Inspectorate on behalf of the Secretary of State regarding the scope and level of detail of the information to be provided in the Applicant's Environmental Statement. The Scoping Opinion for the Project was adopted by the Secretary of State on 02 August 2024.
Scoping Report	A request by the Applicant made to the Planning Inspectorate for a Scoping Opinion on behalf of the Secretary of State. The Scoping Report for the Project was submitted to the Secretary of State on 24 June 2024.
Serious Collision	A collision resulting in serious injury for which a person is detained in hospital as an 'in-patient', or any of the following injuries whether or not they are detained in hospital: fractures, concussion, internal injuries, crushing, burns (excluding friction burns), severe cuts, severe general shock requiring medical treatment and injuries causing death 30 or more days after the accident.
Slight Collision	A collision resulting in a slight injury of a minor character such as a sprain (including neck whiplash injury), bruise or cut which are not judged to be severe, or slight shock requiring roadside attention. This definition includes injuries not requiring medical treatment.
Study Areas	A geographical area and / or temporal limit defined for each EIA topic to identify sensitive receptors and assess the relevant likely significant effects.
Temporary Construction Compounds	Areas set aside to facilitate the construction works for the onshore infrastructure, which include the landfall construction compound, main and intermediate construction compounds for onshore export cable works and OCS and ESBI construction compounds.
The Applicant	SSE Renewables and Equinor acting through 'Doggerbank Offshore Wind Farm Project 4 Projco Limited'
The Project	Dogger Bank D Offshore Wind Farm Project, also referred to as DBD in this PEIR.

Term	Definition
Traffic and Transport Study Area	Area where potential impacts from the Projects could occur, as defined for the traffic and transport EIA topic.
Transition Joint Bay (TJB)	An underground structure at the landfall that houses the joints between the offshore and onshore export cables.
Trenching	Open cut method for cable or duct installation.
Trenchless Techniques	Trenchless cable or duct installation methods used to bring offshore export cables ashore at landfall, facilitate crossing major onshore obstacles such as roads, railways and watercourses and where trenching may not be suitable. Trenchless techniques included in the Project Design Envelope include Horizontal Directional Drilling (HDD), auger boring, micro-tunnelling, pipe jacking / ramming and Direct Pipe.
Vehicle (HV/HGV Traffic) Trips	A vehicle movement (i.e. the arrival or departure from site) for the transfer of employees or delivery of goods.

26 Traffic and Transport

26.1 Introduction

1. This chapter of the Preliminary Environmental Information Report (PEIR) presents the preliminary results of the Environmental Impact Assessment (EIA) of the Dogger Bank D Offshore Wind Farm Project (hereafter 'the Project' or 'DBD') on traffic and transport.

2. **Chapter 4 Project Description** provides a description of the key infrastructure components which form part of the Project and the associated construction, operation and maintenance (O&M) and decommissioning activities.

3. The primary purpose of the PEIR is to support the statutory consultation activities required for a Development Consent Order (DCO) application under the Planning Act 2008. The information presented in this PEIR chapter is based on the baseline characterisation and assessment work undertaken to date. The feedback from the statutory consultation will be used to inform the final design where appropriate and presented in an Environmental Statement (ES), which will be submitted with the DCO application.

4. This PEIR chapter:

   - Describes the baseline environment relating to traffic and transport;
   - Presents an assessment of the likely significant effects on traffic and transport during the construction, O&M and decommissioning phases of the Project;
   - Identifies any assumptions and limitations encountered in compiling the environmental information; and
   - Sets out proposed mitigation measures to avoid, prevent reduce or, if possible, offset potential significant adverse environmental effects identified during the EIA process and, where relevant, monitoring measures or enhancement measures to create or enhance positive effects.

5. This chapter should be read in conjunction with the following related chapters. Inter-relationships are discussed further in **Section 26.9.1**:

   - **Chapter 20 Air Quality and Dust**;
   - **Chapter 25 Noise and Vibration**;
   - **Chapter 29 Human Health**;
   - **Chapter 30 Socio-Economics, Tourism and Recreation**; and
   - **Chapter 31 Climate Change**.

6. Additional information to support the traffic and transport assessment includes:

   - **Volume 2, Appendix 26.1 Consultation Responses for Traffic and Transport**;
   - **Volume 2, Appendix 26.2 Transport Assessment;**
   - **Volume 2, Appendix 26.3 Abnormal Indivisible Load Access Report**; and
   - **Volume 2, Appendix 26.4 Interactions between Impacts**.

26.2 Policy and Legislation

26.2.1 National Policy Statements

7. Planning policy on energy Nationally Significant Infrastructure Projects (NSIP) is set out in the National Policy Statements (NPS). The following NPS is relevant to the traffic and transport assessment:

   - Overarching NPS for Energy (EN-1) (DESNZ, 2023a).

8. The NPS for Renewable Energy Infrastructure (EN-3) (DESNZ, 2023b) and NPS for Electricity Networks Infrastructure (EN-5) (DESNZ, 2023c) both contain policy in relation to the assessment of generation and transmission infrastructure for renewable energy installations, however they do not contain any policy requirement relevant to the traffic and transport assessment.

9. The traffic and transport chapter has been prepared with reference to specific requirements in the above NPS. The relevant parts of the NPS are summarised in **Table 26-1**, along with how and where they have been considered in this PEIR chapter.

Table 26-1 Summary of Relevant National Policy Statement Requirements for Traffic and Transport

NPS Reference and Requirement	How and Where Considered in the PEIR
NPS for Energy (EN-1)	
Paragraph 5.14.5: "If a project is likely to have transport implications, the applicant's ES should include a transport appraisal. The Department for Transport's Transport Analysis Guidance (TAG) and Welsh Governments WelTAG provides guidance on modelling and assessing impacts of transport schemes."	This chapter and the accompanying **Volume 2, Appendix 26.2 Transport Assessment** have been produced in accordance with current transport guidance (referred to later within **Section 26.2.2.1.1)**
Paragraph 5.14.6: "Applicants should consult with National Highways and Highways Authorities as appropriate on the assessment and mitigation to inform the application to be submitted."	The scope of the assessments presented in the chapter and supporting **Volume 2, Appendix 26.2 Transport Assessment** have been discussed and agreed with the relevant highway authorities. Highway authorities have been consulted throughout the drafting of this PEIR with details presented in **Volume 2, Appendix 26.1 Consultation Responses for Traffic and Transport**.
Paragraph 5.14.7: "The applicants should prepare a travel plan including demand management and monitoring measures to mitigate transport impacts. The applicants should also provide details of proposed measures to improve access by active, public and shared transport."	**Section 26.7** contains an assessment of the potential effects on the transport network associated with the Project. A draft version of the **Outline Construction Traffic Management Plan** (CTMP) (document reference 8.15) is provided in support of this PEIR submission. The Outline CTMP includes outline travel plan measures, which would be developed further in consultation with the relevant highway authorities prior to the DCO application and commencement of the Project's construction. An Outline CTMP will also be submitted with the DCO application as outlined in **Table 26-6** and **Table 26-7**, see Commitment ID CO73.
Paragraph 5.14.8: "The assessment should also consider any possible disruption to services and infrastructure (such as road, rail and airports)."	**Section 26.7** contains an assessment of the potential effects on the transport network associated with the Project.
Paragraph 5.14.21: "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."	**Section 26.7** contains an assessment of the potential effects on the transport network associated with the Project and proposes potential mitigation measures. **Section 26.8** contains a preliminary screening of potential cumulative projects for further assessment at ES Stage.

26.2.2 Other Policy and Legislation

10. Other policy and legislation relevant to the traffic and transport assessment is summarised in the following sections.

26.2.2.1 National

26.2.2.1.1 The Strategic Road Network and the Delivery of Sustainable Development

11. The Department for Transport policy paper Circular 01/2022 entitled 'The Strategic Road Network and the Delivery of Sustainable Development' (Department for Transport, 2022) sets out the ways in which National Highways will engage with the 'development industry', public bodies and communities to assist in the delivery of sustainable development.

12. Under the heading of General principles 01/2022, paragraphs 43 and 44 respectively note that:

    "*The company [National Highways] expects development promoters to enable a reduction in the need to travel by private car and prioritise sustainable transport opportunities ahead of capacity enhancements and new connections on the SRN [Strategic Road Network] …*"

    "*Travel plans are an effective means of incentivising the use of sustainable modes of transport. Where these are required, development promoters must put forward clear targets and commitments to manage down the traffic impact of development and maximise the accessibility of and within sites by walking, wheeling, cycling, public transport and shared travel …*"

13. Under the heading of Environmental Assessment 01/2022, paragraph 55 notes that:

    "*… Environmental assessments must be comprehensive enough to establish the likely impacts on air quality, light pollution and noise arising from traffic generated by a development, along with the impacts from any proposed works to the SRN [Strategic Road Network] and identify measures to mitigate these impacts. Requirements and advice for undertaking environmental assessments in respect of transport impacts can be found in the DMRB.*"

14. Circular 01/2022 requirements have been discussed with National Highways at the second Expert Topic Group (ETG) 8 meeting held on 30th September 2024 and are addressed within this PEIR and accompanying **Volume 2, Appendix 26.2 Transport Assessment**.

26.2.2.1.2 Traffic Management Act 2004

15. The Traffic Management Act, 2004 (TMA) was introduced to address congestion and disruption on the road network. The TMA places a duty on local traffic authorities to ensure the expeditious movement of traffic on their road network and those networks of surrounding local authorities.

16. The TMA directs effective communication between local highway authorities and parties interested in carrying out street works. The TMA encourages a disciplined approach and advance communication to the plan the street works.

17. The TMA also contains extra powers for local traffic authorities to manage and direct street works beyond those contained in the New Roads and Street Works Act 1991.

26.2.2.1.3 New Roads and Street Works Act 1991

18. The New Roads and Street Works Act, 1991 (NRSWA) was introduced to enable new roads to be provided, to make new provision with respect to street works and provides a legislative framework for street works by undertakers.

19. The aim of the NRWSA 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.

26.2.2.1.4 Road Traffic Regulation Act 1984

20. The Road Traffic Regulation Act, 1984 (RTRA) was introduced to regulate or restrict traffic on the road network in the interests of safety. The RTRA enables highway authorities to lawfully restrict and manage traffic. In particular, it sets out (in Part I) how Traffic Regulation Orders (or Traffic Management Orders) can be employed to limit or prevent the use of the road by a particular form of traffic.

26.2.2.1.5 Highways Act 1980

21. The Highways Act, 1980 legislates the management and operation of the road network in England and Wales and places statutory duties/powers upon the highway authority. The Act provides for the creation, improvement, and maintenance of roads and for acquisition of land.

22. Section 62 and 278 of the Act provides for private developers to either fund or complete works to public highways outside or beyond the development site itself, such as traffic calming and capacity improvements.

26.2.2.1.6 Local Transport Note (LTN) 1/20 (Cycling Infrastructure Design)

23. The Cycle Design Infrastructure 1/20 document provides guidance to local authorities on implementing safe, high-quality cycle infrastructure. The document discusses how the Department for Transport stresses the high importance of facilitating growth in active modes of travel and meeting the needs of these road users.

24. Chapter 14 discusses how cycle improvements can be made to both existing and new developments. Paragraph 14.4.4 and 14.5.1 states that authorities should:

    "include the objective of enhancing provision for cycling and walking" and *"local authorities are responsible for setting their own design standards for their roads."*

26.2.2.2 Local

25. NPS EN-1 states that the Secretary of State will also consider Development Plan documents or other documents in the Local Development Framework to be relevant to its decision making.

26. The Traffic and Transport Study Area falls under the jurisdiction of East Riding of Yorkshire Council (ERYC) and Hull City Council as the local highway authorities and ERYC as the local authority.

27. Detail of local policy documents, as well as salient policies contained within these documents relevant to the Project's traffic and transport demand, are provided in **Table 26-2**. These policies have been considered within the development of this PEIR.

Table 26-2 Relevant Local Planning Policies

Document	Policy	Policy / Guidance Purpose	How and Where Considered in the PEIR
East Riding Local Plan Update 2025 – 2039– Adopted April 2025	Policy EC4: Enhancing Sustainable Transport	*"Developments should increase overall accessibility, minimise congestion, improve safety, reduce greenhouse gas emissions, encourage healthy lifestyles and reduce social exclusion, new development will be supported where it is accessible, or can be made accessible, by sustainable modes of transport and addresses its likely transport impact Development proposals should* • *Produce and agree a transport assessment and travel plan, where a significant transport impact is likely..."*	The scope of this traffic and transport assessment and accompanying **Volume 2, Appendix 26.2 Transport Assessment** has been discussed and agreed with ERYC through the second meeting of ETG8 held on 30th September 2024 as outlined in **Volume 2, Appendix 26.1 Consultation Responses for Traffic and Transport**. **Section 26.7.1** contains an assessment of the Project's effects on traffic and transport receptors and outlines associated mitigation measures (as appropriate).
Hull Local Plan 2016 – 2032 – Adopted November 2017	Policy 25: Sustainable Travel	In summary, Policy 25 sets out that developments should promote the use of sustainable transport and have minimal impact on the environment and public health.	**Section 26.7.1** contains an assessment of the Project's construction traffic effects upon traffic and transport receptors. The traffic and transport metrics established in this chapter have also been used to inform the consideration of effects upon air quality and human health (detailed in **Chapter 20 Air Quality and Dust** and **Chapter 29 Human Health**).

Document	Policy	Policy / Guidance Purpose	How and Where Considered in the PEIR
	Policy 27: Transport Appraisals	In summary, Policy 27 sets out that development should demonstrate an understanding of the travel requirements and resultant impacts by providing a transport appraisal (e.g. Transport Statement (TS)/ Transport Assessment (TA)/ Travel Plan (TP)) and Construction Management Plan where applicable.	The scope of this traffic and transport assessment and accompanying **Volume 2, Appendix 26.2 Transport Assessment** has been discussed and agreed with Hull City Council through the second meeting of ETG8 held on 30th September 2024 as outlined in **Volume 2, Appendix 26.1 Consultation Responses for Traffic and Transport**. A draft version of the **Outline Construction Traffic Management Plan** (document reference 8.15) is provided as part of the statutory consultation alongside the PEIR.

26.2.2.3 Further Technical Transport Guidance

26.2.2.3.1 Environmental Assessment of Traffic and Movement

28. The Environmental Assessment of Traffic and Movement (EATM) are guidelines published by the Institute of Environmental Management and Assessment (2024) for the assessment of the environmental impacts of road traffic associated with new developments.

29. The purpose of the guidelines is to provide the basis for systematic, consistent and comprehensive coverage for the appraisal of traffic impacts arising from development projects.

30. EATM is the principal guidance that informs this assessment and **Section 26.5** of this chapter contains full details of how the guidance has been applied.

26.2.2.3.2 Planning Practice Guidance – Travel Plans, Transport Assessment and Statements

31. For the purpose of assessing the effect of the Project, the relevant Planning Practice Guidance (PPG) is 'Travel Plans, Transport Assessment and Statements' (henceforth referred to as the Transport PPG).

32. The Transport PPG (Department for Levelling Up, Housing and Communities, 2014) sets out the key principles to be adopted when developing a Transport Assessment as follows:

- Proportionate to the size and scope of the proposed development to which they relate and build on existing information wherever possible;
- Established at the earliest practicable possible stage of a development proposal;
- Be tailored to particular local circumstances (other locally determined factors and information beyond those which are set out in this guidance may need to be considered in these studies provided there is robust evidence for doing so locally); and
- Be brought forward through collaborative ongoing working between the local authority / transport authority, transport operators, rail network operators, Highways Agency (now National Highways) where there may be implications for the strategic road network and other relevant bodies.

33. The Transport PPG key principles have shaped the development of this chapter and the accompanying **Volume 2, Appendix 26.2 Transport Assessment**.

34. Further supplementary technical transport guidance has been utilised in developing the EIA, these documents are outlined in **Table 26-3.**

Table 26-3 Supplementary Technical Transport Guidance

Document	Purpose / Application
Design Manual for Roads and Bridges (DMRB) CD 123 – Geometric design of at-grade priority and signal-controlled junctions (National Highways, 2021)	The DMRB has been prepared for trunk roads and motorways and has been adopted as best practice within this assessment for the design of all accesses.
DMRB GG 119 – Road Safety Audit (Highways England, 2020a)	Provides the requirements for road safety audit for highway schemes.
DMRB LA 112 – Population and Human Health (Highways England, 2020b)	Sets out rights of way sensitivity thresholds for walkers, cyclist and horse riders when crossing roads.
Manual for Streets (Chartered Institute of highways and Transportation, 2007)	Guidance to inform the visibility requirements for junctions where measured speeds are below 40mph.
Manual for Streets 2 (Chartered Institute of Highways and Transport, 2010)	
Traffic Signs Manual Chapter 8 Traffic Safety Measures and Signs for Road Works and Temporary Situations Part 1: Design (Department for Transport, 2009)	Provides guidance upon temporary traffic management that will be used to inform the assessment of driver delay impacts related to temporary road closures.

Document	Purpose / Application
WebTag Unit M1-2 Data Sources and Surveys (Department for Transport, 2024)	Transport analysis guidance (TAG) on the availability of transport modelling data and the survey methods used to gather transport data.

26.3 Consultation

35. Topic-specific consultation in relation to traffic and transport has been undertaken in line with the process set out in **Chapter 7 Consultation**. A Scoping Opinion from the Planning Inspectorate was received on 2nd August 2024, which has informed the scope of the assessment presented within this chapter in **Section 26.4.2**.

36. Feedback received through the ongoing Evidence Plan Process (EPP) in relation to Expert Topic Group (ETG) meetings and wider technical consultation meetings with relevant stakeholders has also been considered in the preparation of this chapter. Details of technical consultation undertaken to date on traffic and transport are provided in **Table 26-4.**

Table 26-4 Technical Consultation Undertaken to Date on Traffic and Transport

Meeting	Stakeholder(s)	Date(s) of Meeting / Frequency	Purpose of Meeting
ETG Meetings			
ETG8 (Traffic and Transport) Meeting 02	ERYC Hull City Council National Highways	30th September 2024	• Discuss scoping responses outlined in the 2024 Scoping Opinion on traffic and transport. • Seek agreement on the Traffic and Transport Study Area. • Discuss and agree the approach to assessment and baseline characterisation with respect to traffic and transport.
Other Technical Consultation			
Network Rail Scorborough Lane Level Crossing Discussions	Network Rail	25th June 2024	• To discuss Network Rail requirements regarding project construction traffic interacting with Network Rail infrastructure. • To discuss Network Rail 'Basic Asset Protection Agreement' and estimate process. • Property implications during and post-project.

37. **Volume 2, Appendix 26.1 Consultation Responses for Traffic and Transport** summarises how consultation responses received to date are addressed in this chapter.

38. This chapter will be updated based on refinements made to the Project Design Envelope and to consider where appropriate stakeholder feedback on the PEIR. The updated chapter will form part of the ES to be submitted with the DCO application.

26.4 Basis of the Assessment

39. The following sections establish the basis of the assessment of likely significant effects, which is defined by the Study Area(s), assessment scope, realistic worst-case scenarios and development scenarios.

40. This section should be read in conjunction with **Volume 2, Appendix 1.2 Guide to PEIR, Volume 2, Appendix 6.2 Impacts Register** and **Volume 2, Appendix 6.3 Commitments Register.**

26.4.1 Study Area

41. An access strategy has been developed that seeks to reduce the impact of Heavy Goods Vehicle (HGV) traffic on the most sensitive communities and to minimise travelling via narrow roads where possible. The access strategy has been facilitated by:

- The construction of a temporary haul road along the onshore export cable corridor (ECC);
- Utilising suitable temporary construction Access Points (AP) to the onshore ECC; and
- Utilising haul road crossings at remote locations to gain access to all parts of the onshore ECC.

42. Further details of the access strategy is detailed in **Volume 2, Appendix 26.2 Transport Assessment.**

43. In addition, the Traffic and Transport Study Area has been further established through determining the most probable routes for traffic, for both the transportation of materials and employees, and has been agreed with the relevant highway authorities (**Volume 2, Appendix 26.1 Consultation Responses for Traffic and Transport**).

44. The extent of the Traffic and Transport Study Area is shown on **Figure 26-1**. It is divided into 91 separate highway sections known as links, which are sections of road with similar characteristics and traffic flows. In total, the Traffic and Transport Study Area comprises approximately 120km of highway network. The 91 links are notated 1 to 100, noting that some links have been omitted during ongoing development of the project design. The removed links were associated with additional onshore ECC options that were removed following further site selection refinements leading up to the identification of the Onshore Development Area in the PEIR.

45. Routes that extend outside of the Traffic and Transport Study Area are where construction traffic has dissipated and subsumed into typical traffic flows and therefore, significant effects upon users of the highway network are unlikely.

46. Discussions on the Traffic and Transport Area were held with stakeholders at the second meeting of ETG8 held on 30th September 2024, further details on the consultation and agreements are contained in **Volume 2, Appendix 26.1 Consultation Responses for Traffic and Transport.**

26.4.2 Scope of the Assessment

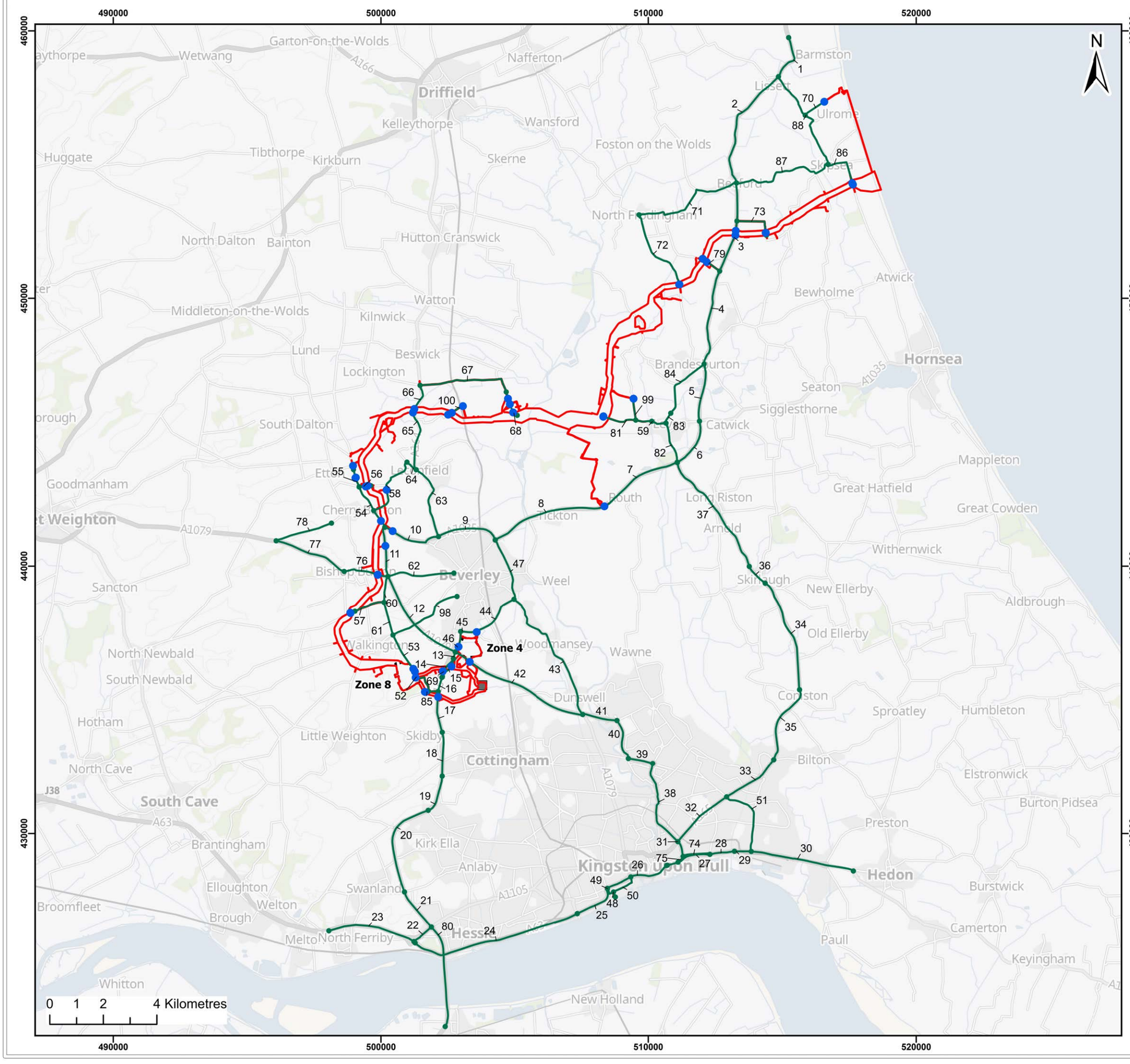
47. A number of impacts have been scoped out of the traffic and transport assessment. These impacts are outlined in **Volume 2, Appendix 6.2 Impacts Register**, along with supporting justification, and accord with the Scoping Opinion (discussed in **Section 26.3**) and the project description outlined in **Chapter 4 Project Description**. A description of how the Impacts Register should be used alongside the PEIR chapter is provided in **Volume 2, Appendix 1.2 Guide to PEIR** and **Chapter 6 Environmental Impact Assessment Methodology**.

48. Impacts scoped into the assessment relating to traffic and transport are outlined in **Table 26-5** and discussed further in **Section 26.7**.

Table 26-5 Traffic and Transport – Impacts Scoped into the Assessment

Impact ID	Impact and Project Activity	Rationale
Construction		
TT-C-01	Severance – road vehicle movements associated with onshore construction activities	Increases in traffic impacting upon non-motorised users of the public highway including users of the Public Rights of Way (PRoW) network, National Cycle Routes and local networks. Impacts could affect local communities and visitors in the Traffic and Transport Study Area.
TT-C-02	Amenity – road vehicle movements associated with onshore construction activities	
TT-C-03	Fear and intimidation – road vehicle movements associated with onshore construction activities	
TT-C-04	Road safety (including hazardous loads) – road vehicle movements and transport of hazardous materials associated with onshore construction activities	Construction traffic impacting upon sites with a record of collisions and / or the introduction of new risks associated with the formation of new construction accesses. Impacts could affect commuters, visitors and business users in the Traffic and Transport Study Area.
TT-C-05	Driver delay (capacity) – road vehicle movements associated with onshore construction activities	Increases in traffic leading to delays at junctions. Impacts would affect commuters, visitors and business users in the Traffic and Transport Study Area.
TT-C-06	Driver delay (highway geometry) – road vehicle movements associated with onshore construction activities	Construction traffic using narrow roads resulting in increased delays. Impacts could affect local communities and visitors in the Traffic and Transport Study Area.
TT-C-07	Driver delay (road closures) – road vehicle movements associated with onshore construction activities	Road closures will require diversion routes that could result in increased delays to highway users. Impacts could affect local communities and visitors in the Traffic and Transport Study Area.
TT-C-08	Abnormal loads – road vehicle movements and transport of abnormal loads associated with onshore construction activities	Large vehicle movements leading to delays to traffic and damage to highway assets. Impacts would affect commuters, visitors and business users in the Traffic and Transport Study Area. A preliminary Abnormal Indivisible Loods (AIL) summary report is provided in **Volume 2, Appendix 26.3 Abnormal Indivisible Load Summary Report**. Further details will be provided at ES stage in the final AIL summary report.
TT-C-10	Onshore impacts of traffic associated with offshore construction activities and any cumulative effects - road vehicle movements associated with deliveries and personnel transport to/from ports to enable offshore construction works	Given that the offshore construction base port(s) is not currently known, and in the absence of the anticipated type and number of road vehicle movements, potential impacts are not fully understood.

Impact ID	Impact and Project Activity	Rationale
		As discussed in **Section 26.7.1.9**, this impact will be addressed by a DCO requirement for a Port Access Management Plan (PAMP) to be developed prior to the commencement of construction if determined to be required post-consent (see Commitment ID CO102 in **Table 26-6**).
Operation		
TT-O-04	Road safety (hazardous loads only) - road vehicle movements and transport of hazardous loads associated with replacement of ESBI components	Operational hazardous loads impacting upon sites with a record of collisions and / or the introduction of new risks associated with the formation of new operational accesses. Impacts could affect commuters, visitors and business users in the Traffic and Transport Study Area.
TT-O-10	Onshore impacts of traffic associated with offshore operational activities and any cumulative effects - road vehicle movements associated with deliveries and personnel transport to/from ports to enable offshore O&M works	Given that the O&M base port is not currently known, and in the absence of the anticipated type and number of road vehicle movements, potential impacts are not fully understood. As discussed in **Section 26.7.2.3**, this impact will be addressed by a DCO requirement for a PAMP to be developed prior to the commencement of operation if determined to be required post-consent (see Commitment ID CO102 in **Table 26-6**).
Decommissioning		
TT-D-01	Severance - decommissioning activities not yet defined	Decommissioning impacts are scoped in; however, details of onshore decommissioning activities are not known at this stage. As discussed in **Section 26.7.3**, decommissioning impacts will be assessed in detail through the Onshore Decommissioning Plan (see **Table 26-6,** Commitment ID CO56) where relevant, which will be developed prior to the commencement of onshore decommissioning works. In this assessment, it is assumed that most decommissioning activities would be the reverse of their construction counterparts, and that their impacts would be of similar nature to, and no worse than, those identified during the construction phase.
TT-D-02	Amenity - decommissioning activities not yet defined	
TT-D-03	Fear and intimidation - decommissioning activities not yet defined	
TT-D-04	Road safety (including hazardous loads) - decommissioning activities not yet defined	
TT-D-05	Driver delay (capacity) - decommissioning activities not yet defined	
TT-D-06	Driver delay (highway geometry) - decommissioning activities not yet defined	
TT-D-07	Driver delay (road closures) - decommissioning activities not yet defined	
TT-D-08	Abnormal loads - decommissioning activities not yet defined	
TT-D-10	Onshore impacts of traffic associated with offshore decommissioning activities and any cumulative effects - decommissioning activities not yet defined	



Legend:

- Onshore Development Area
- Onshore Converter Station Zone Options
- Indicative Birkhill Wood Substation Location
- Links
- Proposed Construction Accesses

Project:

Dogger Bank D
Offshore Wind Farm

DOGGER BANK WIND FARM

Title:

Traffic and Transport Study Area

Figure: 26-1

Drawing No: PC6250-RHD-XX-ON-DR-GS-0487

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
02	28/03/2025	JH	AG	A3	1:140,000
01	16/01/2025	AB	AG	A3	1:140,000

Co-ordinate system: British National Grid

sse Renewables equinor

26.4.3 Embedded Mitigation Measures

49. The Project has made several commitments to avoid, prevent, reduce or, if possible, offset potential adverse environmental effects through mitigation measures embedded into the evolution of the Project Design Envelope. These embedded mitigation measures include actions that will be undertaken to meet other existing legislative requirements and those considered to be standard or best practice to manage commonly occurring environmental effects.

50. The assessment of likely significant effects has therefore been undertaken on the assumption that these measures are adopted during the construction, O&M and decommissioning phases. **Table 26-6** identifies the proposed embedded mitigation measures that are relevant to the traffic and transport assessment.

51. Full details of all commitments made by the Project are provided within the Commitments Register in **Volume 2, Appendix 6.3 Commitments Register**. A description of how the Commitments Register should be used alongside the PEIR chapter is provided in **Volume 2, Appendix 1.2 Guide to PEIR** and **Chapter 6 Environmental Impact Assessment Methodology**. In addition, a list of draft outline management plans which are submitted with the PEIR for consultation is provided in **Section 1.10** of **Chapter 1 Introduction.** These documents will be further refined and submitted along with the DCO application. See **Volume 2, Appendix 1.2 Guide to PEIR** for a list of all PEIR documents.

52. The Commitments Register is provided at PEIR stage to provide stakeholders with an early opportunity to review and comment on the proposed commitments. Proposed commitments may evolve during the pre-application phase as the EIA progresses and in response to refinements to the Project Design Envelope and stakeholder feedback. The final commitments will be confirmed in the Commitments Register submitted along with the DCO application.

Table 26-6 Embedded Mitigation Measures Relevant to Traffic and Transport

Commitment ID	Proposed Embedded Mitigation	How the Embedded Mitigation Will be Secured	Relevance to Traffic and Transport Assessment	Relevance to Impact ID
CO56	An Onshore Decommissioning Plan will be developed prior to commencement of onshore decommissioning works based on the relevant available guidance and legislative requirements. The scope and methodology of onshore decommissioning works and appropriate mitigation measures will be detailed in the plan.	DCO Requirement - Onshore Decommissioning Plan	Limits the potential impacts to traffic and transport receptors as a result of decommissioning activities.	TT-D-01 TT-D-02 TT-D-03 TT-D-04 TT-D-05 TT-D-06 TT-D-07 TT-D-08 TT-D-10
CO64	The Onshore Converter Station (OCS) and Energy Storage and Balancing Infrastructure (ESBI) will be designed to minimise the overall height and massing of associated structures and buildings and integrate them into the surrounding landscape as far as reasonably practicable. The footprint of the permanent above-ground infrastructure will be minimised as far as reasonably practicable whilst ensuring safe and effective operations.	DCO Requirement - Detailed Design (Onshore)	Limits the potential impacts on traffic and transport receptors by reducing the volume of materials required to be delivered to site by Heavy Goods Vehicle (HGV) traffic during the construction phase.	TT-C-01 TT-C-02 TT-C-03 TT-C-04 TT-C-05 TT-C-06 TT-C-07 TT-C-08
CO69	Core working hours for onshore construction activities will be 07:00 to 19:00 Monday to Saturday. Outside of these hours, including Sunday and bank holidays, no construction activities will be undertaken apart from in the following circumstances: • Where extended and continuous periods (up to 24 hours a day, seven days a week) of working are required such as trenchless installation works, concrete pouring and cable pull-in and jointing operations; • Deliveries of abnormal indivisible loads that may otherwise cause congestions on the public highway network; • Testing and commissioning of installed onshore electrical infrastructure; • Daily start-ups and shut-downs, limited to site inspections, housekeeping, briefings, toolbox talks and safety checks; • Emergency works; and • Works as otherwise agreed in writing with the relevant local authority. Vehicle movements on the public highway network and employees' arrival and departure to/from site may occur outside of the core working hours	DCO Requirement - Onshore Construction Hours	Ensures compliance with working hours and limits the potential impacts on traffic and transport receptors outside of identified working hours. Working hours with respect to HGV deliveries to be captured within Outline CTMP.	TT-C-01 TT-C-02 TT-C-03 TT-C-04 TT-C-05 TT-C-06 TT-C-07 TT-C-08

Commitment ID	Proposed Embedded Mitigation	How the Embedded Mitigation Will be Secured	Relevance to Traffic and Transport Assessment	Relevance to Impact ID
CO72	Temporary access points off the public highway will be installed to facilitate vehicular access from the road to temporary works areas for construction. The access points will be constructed prior to the main construction activities for each stage of construction works and in accordance with the principles established in the Outline Construction Traffic Management Plan (CTMP).	DCO Requirement - Construction Traffic Management Plan DCO Requirement - Code of Construction Practice	Identified points of access for Heavy Vehicles (HV) and Light Vehicles (LV) construction traffic forms the basis of traffic distribution and assignment to the highway network. The construction traffic parameters (e.g. traffic numbers and routes) assessed within the PEIR are managed and not exceeded through adherence to the Outline CTMP.	TT-C-01 TT-C-02 TT-C-03 TT-C-04 TT-C-05 TT-C-06 TT-C-07 TT-C-08
CO73	A Construction Traffic Management Plan (CTMP) will be developed in accordance with the Outline CTMP. The CTMP will include: • Measures to control, monitor and enforce the numbers and routeing of Heavy Goods Vehicle (HGV) movement during construction and include localised road improvements that are necessary to ensure the safe passage of HGV traffic via the public highway network; • Details on the location and design of construction and operational accesses, such as the frontage, general layout and visibility; • Detail on how construction employee traffic will be managed and measures to encourage sustainable alternative modes of travel including but not limited to single occupancy car trips during construction; • Measures to manage peak construction traffic flows and reduce the associated construction traffic noise and vehicle emissions; • Measures to ensure early and ongoing information provision to road users and emergency and healthcare services with regard to any temporary road or lane closures and diversions; and • Details on any site-specific additional mitigation measures required to avoid significant effects identified due to construction traffic.	DCO Requirement - Construction Traffic Management Plan	The objective of the CTMP is to define a strategy to ensure that the construction traffic parameters (e.g. traffic numbers and routes) assessed within the PEIR are managed and not exceeded.	TT-C-01 TT-C-02 TT-C-03 TT-C-04 TT-C-05 TT-C-06 TT-C-07 TT-C-08

Commitment ID	Proposed Embedded Mitigation	How the Embedded Mitigation Will be Secured	Relevance to Traffic and Transport Assessment	Relevance to Impact ID
CO74	Highway condition surveys will be undertaken to determine reinstatement requirements for roads affected by the Project's construction. The timings, specification and scale of the survey for each road link will be agreed with the relevant highway authorities prior to implementation and will be proportional to the Project's impacts using recognised UK Pavement Management Systems. Any damage to roads on the public highway network as a result of Heavy Goods Vehicles (HGV) movements directly attributable to the Project's construction activities will be repaired to pre-construction conditions in agreement with the relevant highway authorities and in accordance with the Construction Traffic Management Plan (CTMP).	DCO Requirement - Construction Traffic Management Plan	Limits the impacts on the local highway network infrastructure within the Traffic and Transport Study Area as a result of the Project's traffic. Reduces potential secondary impacts on the safety of all road users.	TT-C-04
CO75	Routeing of construction Heavy Goods Vehicles (HGV) and employee traffic will be directed to and managed at temporary construction compounds where possible to reduce vehicle movements on the public highway network. Onwards travel to the works site will be via the installed temporary haul roads to reduce the number of access points required and construction vehicle movements along the public highway network.	DCO Requirement - Construction Traffic Management Plan	Limits the potential impacts on traffic and transport receptors by significantly reducing the number of construction HGV and LV trips on the local highway network.	TT-C-01 TT-C-02 TT-C-03 TT-C-04 TT-C-05 TT-C-06 TT-C-07 TT-C-08
CO76	Temporary construction compounds will utilise the most suitable roads as access points and be located close to main A roads and away from population centres where practicable to minimise impacts on local communities.	DCO Requirement - Construction Traffic Management Plan DCO Requirement - Code of Construction Practice	Limits the potential impacts on traffic and transport receptors e.g. local communities, while ensuring suitable locations for construction traffic access.	TT-C-01 TT-C-02 TT-C-03 TT-C-04 TT-C-05 TT-C-06 TT-C-07 TT-C-08
CO77	To avoid disruption to transport users of road and rail infrastructure from the installation of cable ducts during construction, trenchless installation techniques will be used for all A and B roads, the Hull-Scarborough railway line and the following local roads: Dunnington Lane, Grange Road, Frodingham Road, Hempholme Lane, Scorborough Lane, Leconfield Road, Finchcroft Lane, Little Weighton Road, Walkington Heads and Risby Lane.	DCO Works DCO Requirement - Construction Traffic Management Plan DCO Requirement - Code of Construction Practice	Limits the potential impacts on all road users where identified trenchless crossings techniques are to be used.	TT-C-06 TT-C-07

Commitment ID	Proposed Embedded Mitigation	How the Embedded Mitigation Will be Secured	Relevance to Traffic and Transport Assessment	Relevance to Impact ID
CO78	Temporary road diversions will be established to provide safe and available access during onshore export cable construction works. Public road diversions will be undertaken through agreed routes via the public highway network and existing private tracks, and where required, constructed temporary access tracks within the Onshore Development Area.	DCO Requirement - Construction Traffic Management Plan	Minimises disruption to highway users from essential roadworks.	TT-C-06 TT-C-07
CO102	A Port Access Management Plan(s) (PAMP) will be developed once the preferred offshore construction base port(s) and O&M base port for the Project have been confirmed and agreed with the relevant authorities prior to commencement of construction and operation respectively. The PAMP will be developed if the traffic generated for the construction and operation of the selected base port is outwith the existing baseline of traffic movements at the existing port facility or existing permitted developments should a new facility or extension be required. The PAMP will provide an assessment of the traffic movements due to the port(s) operations for offshore construction and O&M activities and the associated noise and air quality effects, and if required, detail mitigation measures to avoid significant effects.	DCO Requirement - Port Access Management Plan	If determined to be required post-consent, the PAMP(s) would assess the potential cumulative impacts to onshore traffic and transport receptors as a result of additional traffic movements associated with activities at the offshore construction base port(s) and O&M base port for offshore construction and O&M activities respectively.	TT-C-10 TT-O-10

53. A draft version of the **Outline Construction Traffic Management Plan** (document reference 8.15) has been provided at PEIR stage for consultation and will be updated at ES stage and submitted with the DCO application. The Outline CTMP will detail measures relevant to traffic and transport that will be secured in the plan. Indicative embedded mitigation measures which are included in the Outline CTMP are set out in **Table 26-7.**

Table 26-7 Indicative Embedded Mitigation Measures Included in the Outline Construction Traffic Management Plan

Outline CTMP: Embedded Mitigation Measures for Traffic and Transport

Control of HGV Routes

The following measures are proposed to ensure compliance with the HGV delivery routes:

- Direction signing (including any proposed temporary diversion signage) will be implemented to direct construction traffic to the respective accesses along the assessed delivery routes (the location and design of these signs will be agreed with the relevant highway authorities prior to the commencement of the relevant stage of construction works);
- The delivery routes, prohibited routes and delivery timings will be communicated by the TMCo through the issuing of delivery instructions to all companies and / or drivers involved in the transport of materials and plant to and from site by HGV construction vehicles;
- The registration numbers for all HGV making deliveries will be recorded by the TMCo. This will allow for checking and enforcement of any reported breaches of the agreed delivery routes;
- It will be a requirement where vehicle tracking is fitted to vehicles, the systems are operational and that suppliers / drivers make tracking data available to the TMCo. Vehicle tracking will allow the TMCo to investigate any breaches; and
- An 'identifier' will be required to be placed in the window of all delivery vehicles which are to transport bulk deliveries (e.g. stone) to enable residents to identify if an HGV is engaged on work on the Project. It is not appropriate to provide vehicle identifiers for the local supply chain that may undertake multidrop deliveries to other businesses in the area. Details of the identifier will be submitted to, and approved by, the relevant highway authorities as part of the CTMP.

HGV Timings

With the exception of the construction activities identified in Commitment ID CO69, HGV construction traffic movements will not be permitted to arrive or depart site accesses outside of the core working hours (07:00 to 19:00 Monday to Saturday). This would not preclude HGV travel to and from the site of the relevant works via the wider highway network which may occur prior to or after the core working hours.

Any HGV which are projected to arrive on site outside of core working hours will be required to park at an appropriate lorry park, services and other designated overnight parking locations until they can complete their journey within appropriate restrictions. These locations will be agreed with the relevant highway authorities prior to the commencement of the relevant stage of construction works and will be communicated to drivers within their delivery instructions.

Outline CTMP: Embedded Mitigation Measures for Traffic and Transport

Driver Inductions

All HGV drivers for the Project will undergo formal induction during which a clear set of responsibilities will be established that all drivers must follow. A draft of the indicative content for such inductions is outlined below:

- Timings;
- Briefing of the approved HGV routes;
- Highway safety concerns;
- Adherence to speed limits;
- Details of reporting accidents and 'near misses';
- A plan showing the delivery routes and the location of the site access;
- Details of appropriate lorry park, services and other designated overnight parking locations where drivers are permitted to stop;
- Details of restrictions on delivery hours; and
- Details of disciplinary measures for non-compliance.

HGV Numbers

To provide the relevant highway authorities with an indication of when peak deliveries may occur within the construction programme, the CTMP will also be updated to include indicative profiles for monthly deliveries per link for the construction duration.

LV Vehicle Numbers

To ensure compliance with any limits on LV trips along identified sensitive links, the TMCo will create a resource forecast of the number of employees that could be travelling to the Project's construction sites. This resource forecast will help the TMCo take proactive measures to prevent exceedances. The forecast will be regularly reviewed and updated throughout the construction phase to ensure continued compliance.

Where potential exceedances are identified, the TMCo will need to either:

- Reschedule activities to reduce the overlap or intensity of trips; or
- Implement 'enhanced travel planning' measures, e.g. car-sharing, private multi-occupancy vehicle transport.

A range of best practice measures that could be adopted to reduce the number of single occupancy car trips include:

- Identify car-share, pick up locations;
- Parking within designated areas;
- Walking and cycling facilities;
- Guaranteed lift home;
- Staff communications;
- Welfare facilities; and

Outline CTMP: Embedded Mitigation Measures for Traffic and Transport

- Supporting the local economy.

Control of Material on the Highway

To prevent debris and other material being deposited on the public highway the Principal Contractor(s) will implement a series of site-specific measures. Prior to the commencement of the relevant stage of construction works, the details of the measures that will be used for each access will be submitted to and agreed with the relevant highway authorities as part of the CTMP.

It is envisaged that, as a minimum, measures would include the following:

- All accesses and crossings will be provided with a bound surface (e.g. asphalt / concrete) to prevent mud and dirt being tracked onto the highway;
- Regular inspections of the public highway in the vicinity of the active site accesses to ensure cleanliness; and
- Road sweepers will be deployed to clear any debris and other material from the public highway.

Abnormal Loads

Prior to the movement of any AIL or abnormal loads, the TMCo will ensure that stakeholders are notified through ESDAL and agree with the relevant highway authorities, police and Network Rail (where applicable) suitable timings, routes and asset protection measures appropriate to the type of load.

Traffic Incident Management

To reduce the potential for construction traffic to have an adverse impact upon the highway network during planned and unplanned events, the following measures would be adopted:

- Managing traffic demand during major events that impact on the highway (e.g. bike races, parades, etc.) and around public holidays;
- Managing traffic demand during major incidents such as accidents on the highway;
- Managing traffic demand during road closures; and
- Managing incidents involving Principal Contractor(s) HGV traffic blocking the highway (e.g. breakdowns, accidents, etc).

Highway Condition Surveys

Highway condition surveys will be undertaken by the TMCo prior to the commencement of the relevant stage of construction works and after the substantial completion of the relevant construction works. The surveys will include all roads and verges within the Traffic and Transport Study Area that are not specifically designated for HGV movements, i.e. excluding all A roads.

Any damage to the existing highway network as a direct consequence of the Project will be repaired by the Principal Contractor(s), or a financial contribution made to East Riding of Yorkshire Council to cover the cost of remedial works.

The survey would most likely comprise of a Coarse Visual Inspection survey (in accordance with the UK Pavement Management System standard). Prior to the commencement of the relevant stage of construction works, the timings, geographical extent and scope of surveys will be agreed between the TMCo and East Riding of Yorkshire Council and outlined within the CTMP.

Outline CTMP: Embedded Mitigation Measures for Traffic and Transport

In addition to undertaking surveys prior to and on completion of the construction works, the Principal Contractor(s) will also undertake regular inspections of the highway network to identify any defects (such as damage to verges or the formation of potholes). The Principal Contractor(s) will be assisted in this function by the CLO who will provide feedback on local highway condition issues gathered through community engagement.

Where defects are identified as a direct result of the Project's construction traffic, the Principal Contractor(s) will notify East Riding of Yorkshire Council and either agree the repair works or the financial contribution required by East Riding of Yorkshire Council to cover the cost of remedial works.

26.4.5 Realistic Worst-Case Scenarios

54. To provide a precautionary, but robust, assessment at this stage of the Project's development process, a realistic worst-case scenario has been defined in **Table 26-8** for each impact scoped into the assessment (as outlined in **Section 26.4.2**). The realistic worst-case scenarios are derived from the range of parameters included in the Project Design Envelope. They ensure that the assessment of likely significant effects is based on the maximum potential impact on the environment. Should an alternative development scenario be taken forward in the final design of the Project, the resulting effects would not be greater in effect significance. Further details on the Project Design Envelope are provided in **Chapter 6 Environmental Impact Assessment Methodology**.

55. Following the PEIR publication, further design refinements will be made based on ongoing engineering studies and considerations of the EIA and stakeholder feedback. Therefore, realistic worst-case scenarios presented in the PEIR may be updated in the ES. The Project Design Envelope will be refined where possible to retain design flexibility only where it is needed.

26.4.6 Development Scenarios

56. Consideration is also given to the different development scenarios with respect to the OCS zones. At this stage, two OCS zone options remain in the Project Design Envelope (see **Chapter 4 Project Description** for further details) noting that only one option will be developed. The two development scenarios are:

- Infrastructure located in OCS Zone 4; or
- Infrastructure located in OCS Zone 8.

57. With respect to the traffic and transport assessment, it is noted that the assessment of likely significant effects is not materially affected by the two development scenarios, as the range of receptors, realistic worst-case scenarios and potential effects are applicable to both OCS zone options. However, it should be noted that some links and accesses presented in this assessment are only relevant to either OCS Zone 4 or OCS Zone 8. Therefore, the assessment outcomes presented in **Section 26.7** are comprehensive and apply to both development scenarios where applicable.

Table 26-8 Realistic Worst-Case Scenarios for Impacts on Traffic and Transport

Impact ID	Impact and Project Activity	Realistic Worst-Case Scenario	Rationale
Construction			
TT-C-01	Severance – road vehicle movements associated with onshore construction activities	**Construction Year** Earliest onshore construction commencement year is 2029. **General** Traffic demand has been forecasted by applying a 'first principles' approach. The first principles approach generates traffic volumes from an understanding of material quantities and employee numbers required for the Project and converts these metrics into vehicle trips. The following worst-case assumptions (described in detail in **Volume 2, Appendix 26.2 Transport Assessment**) have been applied to all scenarios: • HGV numbers assume all materials are delivered direct to the work area by road, i.e. no use of rail or water transport; • HGV numbers assume no back-hauling, i.e. no reduction has been applied to take account of the potential that vehicles making deliveries could be used to export materials on the return trip; • Contingencies (reflecting the uncertainties in the design) has been applied to all material quantities and associated HGV movements; • Employee movements have been based upon one employee to one vehicle, i.e. no reduction has been applied to account for the potential that construction employees may car-share, or travel in contractor provided site vehicles; • HGV and employee movements have been averaged over 5.5 working days rather than six; and • No reduction in traffic movements has been applied to account for the reassignment of traffic. For example, many HGV would have a local supply chain origin on the local network serving existing customers and would naturally reassign to serve the Project and would not represent a net increase to baseline traffic flows.	The assessment of severance, amenity, fear and intimidation and road safety is informed through a consideration of the magnitude of change in daily traffic flows. In order to consider a worst-case scenario, the assessment utilises the peak daily traffic flows that could occur during the construction phase.
TT-C-02	Amenity – road vehicle movements associated with onshore construction activities		
TT-C-03	Fear and intimidation – road vehicle movements associated with onshore construction activities		
TT-C-04	Road safety (including hazardous loads) – road vehicle movements and transport of hazardous materials associated with onshore construction activities		
TT-C-05	Driver delay (capacity) – road vehicle movements associated with onshore construction activities		The assessment of driver delay is informed through a consideration of changes in hourly traffic flows. In order to consider a worst-case scenario, the assessment utilises the peak daily traffic flows that could occur during the construction phase. Hourly flows are then calculated from peak daily traffic flows.
TT-C-06	Driver delay (highway geometry) – road vehicle movements associated with onshore construction activities		
TT-C-07	Driver delay (road closures) – road vehicle movements associated with onshore construction activities		

Impact ID	Impact and Project Activity	Realistic Worst-Case Scenario	Rationale
TT-C-01	Severance – road vehicle movements associated with onshore construction activities	**Development Scenario** In order to determine which development scenario presents the realistic worst-case, a detailed review of construction activity for each development scenario has been undertaken. Full details of the traffic derivation are contained in **Volume 2, Appendix 26.2 Transport Assessment**. The worst-case parameters associated with the derivation of the construction vehicle numbers are provided within **Volume 2, Appendix 26.2 Transport Assessment**. **Volume 2, Appendix 26.2 Transport Assessment** outlines the worst-case parameters adopted for assigning these daily traffic numbers to the Traffic and Transport Study Area. The resultant peak daily traffic flows upon each link within the Traffic and Transport Study Area is presented in **Table 26-20**	The assessment of all traffic and transport impacts presented within this chapter has been informed by the Project's worst-case peak construction traffic demand.
TT-C-02	Amenity – road vehicle movements associated with onshore construction activities		
TT-C-03	Fear and intimidation – road vehicle movements associated with onshore construction activities		
TT-C-04	Road safety (including hazardous loads) – road vehicle movements and transport of hazardous materials associated with onshore construction activities		
TT-C-05	Driver delay (capacity) – road vehicle movements associated with onshore construction activities		
TT-C-06	Driver delay (highway geometry) – road vehicle movements associated with onshore construction activities		
TT-C-07	Driver delay (road closures) – road vehicle movements associated with onshore construction activities		
TT-C-08	Abnormal loads – road vehicle movements and transport of abnormal loads associated with onshore construction activities	Further details on abnormal loads are provided in **Volume 2, Appendix 26.3 Abnormal Indivisible Load Summary Report**. **Onshore ECC (Cable Drums)** Number: 112, Weight: 24 – 32 tonnes, Diameter: 4.5m, 4.5m width. To be transported on an articulated HGV with a low loader/ load bed trailer. **OCS (Transformers)** Number: 4, Weight 250 – 330 tonnes, Height: 5 to 5.5m, Length: 12m, Width: 6m To be transported by a specialist abnormal load vehicle (Girder) with further details to be provided at ES stage. **ESBI (Transformers)** Number: 4, Weight 200 tonnes, Height: 4.1m, Length: 9.8m, Width: 3.7m To be transported by a specialist abnormal load vehicle (Girder) with further details to be provided at ES stage.	The largest potential loads have been utilised to derrive abnormal vehicle specification to assess the impact upon structures, highway condition, and manoeuvrability.

Impact ID	Impact and Project Activity	Realistic Worst-Case Scenario	Rationale
TT-C-10	Onshore impacts of traffic associated with offshore construction activities and any cumulative effects - road vehicle movements associated with deliveries and personnel transport to/from ports to enable offshore construction works	As discussed in **Section 26.7.1.9**, this impact is not assessed in the PEIR but will be addressed by a DCO requirement for a Port Access Management Plan (PAMP) to be developed post-consent (if required) and prior to the commencement of construction (Commitment ID CO102).	
Operation			
TT-O-04	Road safety (hazardous loads only) - road vehicle movements and transport of hazardous loads associated with replacement of ESBI components	It is expected that the OCS and ESBI will not be permanently manned during operation. However, staff will periodically visit to carry out planned inspections and maintenance. It is estimated that on average there would be one visit per week by two personnel (equivalent to up to four vehicle trips). Most annual maintenance will be short, however, if necessary, some campaigns may be longer. Any inspections / maintenance of the landfall and onshore export cable infrastructure will be infrequent and subject to very low vehicle demand. The ESBI will require the battery units to be replaced on a 10 to 15 year cycle depending on use over the O&M phase of 35 years. It is estimated that a worst-case scenario that all battery units would need replacing. It is assumed that there could be up to 50 battery blocks (each block could contain up to 24 battery units). Thus, a total of 1,200 battery units could require replacing during the five year replacement window. For a worst-case scenario, it is assumed that all 1,200 battery units would need to be replaced within a one year period. It is assumed that three battery units can be transported per HGV. This would result in a total of 800 two-way movements. This would equate to up-to four HGV movements per day over 260 working days. Other onshore infrastructure components may require replacement / repair events over the O&M phase. However, these requirements are more infrequent and subject to lower vehicle demand, therefore the replacement of battery units for the ESBI represents the realistic worst-case scenario for traffic and transport effects during the O&M phase, and the only onshore infrastructure component that requires consideration with respect to hazardous loads. Considering the O&M activities described in **Chapter 4 Project Description**, no significant traffic and transport effects are anticipated during the O&M phase and as agreed with the relevant highway authorities (detailed in **Volume 2, Appendix 26.1 Consultation Responses for Traffic and Transport**). Thus, apart from the road safety and hazardous loads assessment, no other operational impacts will be assessed within this traffic and transport impact assessment.	
TT-O-10	Onshore impacts of traffic associated with offshore operational activities and any cumulative effects - road vehicle movements associated with deliveries and personnel transport to/from ports to enable offshore O&M works	As discussed in **Section 26.7.2.3**, this impact is not assessed in the PEIR but will be addressed by a PAMP to be developed post-consent (if required) and prior to the commencement of operation (Commitment ID CO102).	

Impact ID	Impact and Project Activity	Realistic Worst-Case Scenario	Rationale
Decommissioning			
TT-D-01	Severance - decommissioning activities not yet defined	The final decommissioning strategy of the Project's onshore infrastructure has not yet been decided. For a description of potential onshore decommissioning works, refer to **Chapter 4 Project Description**. It is recognised that regulatory requirements and industry best practice change over time. Therefore, the details and scope of onshore decommissioning works will be determined by the relevant regulations and guidance at the time of decommissioning. Specific arrangements will be detailed in an Onshore Decommissioning Plan (see **Table 26-6**, Commitment ID CO56), which will be submitted and agreed with the relevant authorities prior to the commencement of onshore decommissioning works. For this assessment, it is assumed that decommissioning is likely to operate within the parameters identified for construction (i.e. any activities are likely to occur within the temporary construction working areas and require no greater amount or duration of activity than assessed for construction). The decommissioning sequence will generally be the reverse of the construction sequence. It is therefore assumed that decommissioning impacts would likely be of similar nature to, and no worse than, those identified during the construction phase.	
TT-D-02	Amenity - decommissioning activities not yet defined		
TT-D-03	Fear and intimidation - decommissioning activities not yet defined		
TT-D-04	Road safety (including hazardous loads) - decommissioning activities not yet defined		
TT-D-05	Driver delay (capacity) - decommissioning activities not yet defined		
TT-D-06	Driver delay (highway geometry) - decommissioning activities not yet defined		
TT-D-07	Driver delay (road closures) - decommissioning activities not yet defined		
TT-D-08	Abnormal loads - decommissioning activities not yet defined		
TT-D-10	Onshore impacts of traffic associated with offshore decommissioning activities and any cumulative effects - decommissioning activities not yet defined		

26.5 Assessment Methodology

26.5.1 Guidance Documents

58. The following guidance documents have been used to inform the baseline characterisation, assessment methodology and mitigation design for traffic and transport:

- Environmental Assessment of Transport and Movement (IEMA, 2024);
- DMRB LA 112 – Population and Human Health (Highways England, 2020b);
- Planning Practise Guidance – Travel Plans, Transport Assessment and Statements (Department for Levelling Up, Housing and Communities, 2014);
- Manual for Streets (Chartered Institute of highways and Transportation, 2007); and
- Manual for Streets 2 (Chartered Institute of Highways and Transport, 2010).

59. The relevance of each guidance document is detailed in **Section 26.2.2**.

26.5.2 Data and Information Sources

26.5.2.1 Desk Study

60. A desk study has been undertaken to compile baseline information in the previously defined Study Area (see **Section 26.4.1**) using the sources of information set out in **Table 26-9**.

Table 26-9 Desk-Based Sources for Traffic and Transport Data

Data Source	Spatial Coverage	Year(s)	Summary of Data Contents
Traffic Flows	38 locations within the Traffic and Transport Study Area	2008, 2019, 2021 and 2023.	National road traffic statistics provides a summary of traffic flows and vehicle composition (e.g. HGV, car, motorcycle) for a range of motorways, 'A' road and minor roads across the UK. Data was acquired for 38 of the 91 links within the Traffic and Transport Study Area. Full details of the data and application in the Traffic and Transport Study Area is presented in **Volume 2, Appendix 26.2 Transport Assessment**.
Peartree Hill Solar Farm PEIR	2 locations within the Traffic and Transport Study Area	2024	24hr Annual Average Daily Traffic (AADT) flows captured within Appendix 14.1 of the Peartree Hill Solar Farm PEIR (RWE, 2024). Full details of the data and application in the Traffic and Transport Study Area is presented in **Volume 2, Appendix 26.2 Transport Assessment**.
Collision data	All links within the Traffic and Transport Study Area	Data was acquired for the latest period available at the time of drafting (01/01/2018 to 30/06/2024 for ERYC and 01/02/2018 to 31/07/2024 for Hull City Council)	Collisions on the public highway that are reported to the police, and which involve injury or death are recorded by the police on a form known as STATS19 and collated by the relevant local highway authorities (ERYC and Hull City Council). The personal injury collision data includes a wide variety of information about the collision (such as time, date, location, road conditions). Full details of the data and application in the Traffic and Transport Study Area is presented in **Volume 2, Appendix 26.2 Transport Assessment**.
Public Rights of Way	The extent of the Traffic and Transport Study Area	n/a	Geographic Information System showing the location of PRoW.
National Cycle Network routes	The extent of the Traffic and Transport Study Area	n/a	Map of the National Cycle Network routes from Sustrans.

26.5.2.2 Site-Specific Surveys

61. In addition to desk-based sources, site-specific surveys were undertaken to provide detailed baseline information on traffic and transport. **Table 26-10** summarises surveys that have been completed which are relevant to the traffic and transport baseline characterisation.

Table 26-10 Site-Specific Survey Data for Traffic and Transport

Survey	Spatial Coverage	Year	Summary of Survey Data
Automatic Traffic Counts	41 locations within the Traffic and Transport Study Area	2024	Traffic counts were undertaken for the Project which provided classified hourly and daily count and speed data. Traffic flows were obtained for a period of seven days. Survey locations were consulted and agreed with stakeholders through the second meeting of ETG8 held on 30th September 2024 and details are provided in **Volume 2, Appendix 26.1 Consultation Responses for Traffic and Transport**. Full details are provided within **Volume 2, Appendix 26.2 Transport Assessment**.

26.5.3 Impact Assessment Methodology

62. **Chapter 6 Environmental Impact Assessment Methodology** sets out the overarching approach to the impact assessment methodology. The following sections describe the method used to assess the likely significant effects on traffic and transport. These principles have been augmented by traffic and transport specific methodologies (as prescribed in EATM) to inform a significance evaluation.

63. It was agreed during the second ETG8 meeting attended by ERYC, National Highways and Hull City Council held on 30th September 2024 (see **Volume 2, Appendix 26.1 Consultation Responses for Traffic and Transport**), that the potential traffic and transport impacts to be assessed are:

- Severance;
- Amenity;
- Road Safety (including Hazardous Loads);
- Driver Delay (Capacity);
- Driver Delay (Highway Geometry); and
- Abnormal Loads.

64. Traffic borne air quality, noise and vibration and health effects have been informed by the traffic data outlined in this chapter. These effects are assessed in **Chapter 20 Air Quality and Dust**, **Chapter 25 Noise and Vibration** and **Chapter 29 Human Health** respectively.

26.5.3.1 Abnormal Load Impact Assessment

65. Abnormal load is a generic term that covers a broad range of vehicles, ranging from limited load projections permitted for standard vehicles, to Special Order Vehicles designed specifically for the purpose of moving loads well in excess of standard vehicle parameters.

66. Loads that require Special Type Vehicles are defined as Abnormal Indivisible Loads (AIL) in The Road Vehicles (Authorisation of Special Types) (General) Order 2003. The Road Vehicles (Authorisation of Special Types) (General) Order limits gross weight of an AIL to 150 tonnes, axle weight to 16,500kg, length to 30m and/or width to 6.1m, above which a Special Order is required from National Highways (who manage approval on behalf of the Secretary of State for Transport).

67. The transformers for the Project's OCS and ESBI will require Special Order AIL. In addition, there may also be a requirement for non-Special Order abnormal loads associated with large items of plant, cable drums, ESBI etc.

26.5.3.1.1 Special Order AIL

68. The Applicant is currently undertaking an AIL study assessing the effects of transporting the transformers to inform the management measures required for the transportation of AIL for the Project. A preliminary summary report of the study, which was undertaken by Wynns Ltd (consulting engineers specialising in the transportation of AIL) is provided in **Volume 2, Appendix 26.3 Abnormal Indivisible Load Access Report**. The final AIL study report will be provided at ES stage, which will confirm the AIL access to the OCS zone.

69. The AIL preliminary summary report considered one potential access option for OCS Zone 4 and one for OCS Zone 8.

70. The preliminary summary report has identified that the loads would most likely originate from the Port of Hull (Albert Docks) and travel to either OCS Zone 4 or OCS Zone 8 via a preferred route of the A63, A1034 and A1079. This route was utilised in 2022 and 2023 for trailers carrying 256 tonne nett transformers for the Dogger Bank A and B Offshore Wind Farms' onshore substations which have completed construction.

71. It is worth noting that any Agreements in Principle for structures tend to last for a period of two years. Further consultation will be undertaken with the relevant highway authorities to determine if there has been any material depreciation of those assets, and which may require re-assessment.

72. Due to the larger load of 330 tonne nett transformers proposed for the Project, two specific structures have been identified as needing further assessments at Cliff Mill Railway and South Cave Junction.

73. A potential alternative shorter route via the A164 is under investigation, however there are specific concerns on the structural suitability of the A164 Eppleworth Road Bridge (West of Cottingham).

74. Both routeing options will be investigated further, and the most suitable route will be selected and detailed within the final AIL report (provided at ES stage). The AIL report will further include Swept Path Analysis for the final selected transport vehicle to understand any local accommodation works along the route, including overrunning of kerbs, temporary removal of traffic signs, traffic signals, bollards and pruning of tress etc. that will be required to safely transport the Special Order AIL.

75. Ongoing consultation will be undertaken with National Highways (responsible for consenting AIL movements) to obtain Agreement in Principle to the final proposed route for negotiability and details of further structural investigations required post-DCO determination. These agreements will be included within the final AIL study report.

76. It is worth highlighting that Associated British Ports (ABP) changed their requirements for heavy lifts at their UK ports in April 2024, and this has resulted in additional geotechnical engineering studies being required to confirm the requisite capacity at Albert Docks.

77. Notwithstanding the 255 tonnes nett transformers for Dogger Bank A and B onshore substations have offloaded at the port in recent years, ABP are requesting that geotechnical ground engineering studies are undertaken before agreeing to further heavy lifts using the same methodology. This will require further ground engineering studies at Albert Dock and consultation with third party consulting engineers and ABP to confirm an acceptable future operating procedure.

26.5.3.1.2 Non-Special Order Abnormal Loads

78. The total assessed forecast HGV movements include the transportation of cable drums, battery units for the ESBI and various plant, which could require non-Special Order abnormal loads.

79. Plant movements are likely to be made by standard HGV with limited load projections and therefore are not considered separately in the overall impact assessments. Cable drum and battery unit size would be subject to a number of factors (e.g. market conditions, port facilities, shipping constraints, transmission technology) and is unlikely to be finalised until after the Principal Contractor(s) is appointed and procurement decisions are made post-consent.

26.5.3.1.3 Abnormal Load Controls

80. The Electronic Service Delivery for Abnormal Loads (ESDAL) is a system that aids hauliers to plan abnormal load routes. It assists by identifying the relevant stakeholders and required notifications. ESDAL enables stakeholders (e.g. structure owners, highway authorities and the police) to assess routes for suitability and manage abnormal load notifications.

81. To manage and coordinate potential impacts associated with the transportation of all AIL, the draft version of the **Outline Construction Traffic Management Plan** (document reference 8.15) (see Commitment ID CO73 in **Table 26-6**) includes a requirement for the Principal Contractor(s) to submit notifications to the relevant authorities (e.g. police, highway authorities and bridge / structure owners) through ESDAL before moving any AIL during construction. The ESDAL system would specify the proposed routes to be used, ensure coordination of timings, and confirm that any potential effects would not be significant.

26.5.3.2 Impact Assessment Criteria

26.5.3.2.1 Definitions

82. For each potential impact, the assessment identifies receptors sensitive to that impact and implements a systematic approach to understanding the impact pathways and the level of impacts (i.e. magnitude) on given receptors. The definitions of sensitivity and magnitude for the purpose of the traffic and transport assessment are provided in **Table 26-12** and **Table 26-15**.

26.5.3.2.2 Receptor Sensitivity

83. EATM identifies that it is necessary to identify particular user groups ('receptors') and associated locations, which may be sensitive to changes in the traffic and transport network conditions.

84. **Table 26-11** provides a summary of the potential impacts and an indication of the receptors affected and potential locations that will be considered within the assessment.

Table 26-11 Potential Impacts and Receptors

Potential Impacts	Receptors	Location
Severance	Pedestrians, cyclists and equestrians	Local communities adjoining the Traffic and Transport Study Area, designated routes, e.g. Public Rights of Way (PRoW), National Cycle Routes (NCR).
Amenity		
Fear and Intimidation		

Potential Impacts	Receptors	Location
Road Safety (including Hazardous Loads)	All road users	Traffic and Transport Study Area
Driver Delay (Capacity)	Drivers and passengers in vehicles	Highway links and junctions
Driver Delay (Highway Geometry)		
Driver Delay (Road Closures)		
Abnormal Loads	All road users	

26.5.3.2.2.1. Severance, Amenity and Fear and Intimidation.

85. For the impacts of severance and amenity, an evaluation of the Traffic and Transport Study Area has been undertaken to identify potential locations with a concentration of receptors which may be sensitive to changes in traffic conditions.

86. Definitions of the different sensitivity levels for highway traffic receptors are given in **Table 26-12.**

Table 26-12 Definition of Sensitivity for Receptors

Sensitivity	Definition
High	A high concentration of sensitive receptors (e.g. hospitals, schools, residential dwellings, areas with high footfall) and limited separation from traffic provided by the highway environment; or a low concentration of sensitive receptors and no separation from traffic provided by the highway environment.
Medium	A low concentration of sensitive receptors (e.g. residential dwellings, pedestrian desire lines) and some separation from traffic provided by the highway environment.
Low	Few sensitive receptors.
Negligible	Links that fall below EATM Rule 1 and 2 screening thresholds (see **Section 26.5.3.3**) and major 'A' roads with no pedestrian, cycle or equestrian environment; or a highway environment that can accommodate changes in volumes of traffic.

26.5.3.2.2.2. Road Safety (including Hazardous Loads)

87. To assess the effects on road safety (including hazardous loads), **Volume 2, Appendix 26.2 Transport Assessment** includes an examination of the recorded collisions occurring within the Traffic and Transport Study Area. This analysis identifies areas of the highway with a high concentration of collisions with similar patterns (termed collision clusters), or roads with collision rates above the national average.

88. These areas, summarised in **Table 26-19**, are considered to be sensitive to changes in traffic flows (sensitive receptors) and a detailed analysis of significance of the collision data is undertaken (in **Section 26.7.1.5**) to understand the locations' sensitivity to changes in traffic flow.

89. With regard to hazardous loads, the road links with the potential to support delivery of the ESBI's battery units are identified as Links 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 38, 39, 40, 41, 42, 45, 46, 48, 49, 50, 52, 74 and 75. **Figure 26-1** shows the locations of these links.

90. The identified links outline the routes from the likely origin of the ESBI's battery units at the Ports of Hull and route to each of OCS Zone 4 and OCS Zone 8. A detailed analysis of significance of the collision data on the hazardous loads' routes is undertaken in **Section 26.7.1.5** to understand the locations' sensitivity to changes in traffic flow (specifically in relation to HGV movements).

26.5.3.2.2.3. Driver Delay (Capacity)

91. Junctions and links that are operating at or above their theoretical capacity could be considered to be of high sensitivity, whilst junctions operating with spare capacity would be of negligible to medium sensitivity.

92. Recognising the extent of the Traffic and Transport Study Area (approximately 120km of highway network), a proportionate approach to the assessment of driver delay (capacity) effects has been discussed and agreed with the relevant highway authorities at the second meeting of ETG8 held on 30th September 2024 (see **Volume 2, Appendix 26.1 Consultation Responses for Traffic and Transport**).

93. For the PEIR, it was agreed that the assessment of driver delay (capacity) should present details of the peak hour construction flows for the Traffic and Transport Study Area.

94. The relevant highway authorities have confirmed that they will review the changes in traffic flow and use their local knowledge to identify any junctions or links where they believe the Project could affect capacity.

95. These junctions/links would be considered to be sensitive to changes in traffic and will be assessed further within the ES. The remaining roads and junctions within the Traffic and Transport Study Area would therefore not be assessed further.

26.5.3.2.2.4. Driver Delay (Highway Geometry)

96. A review of all links within the Traffic and Transport Study Area has been undertaken to identify those with constrained width, which could prevent two vehicles from passing and therefore lead to potential delays due to waiting and manoeuvring.

97. Within the Traffic and Transport Study Area, there are 14 links (out of a total of 91 links) that are of constrained width. These are detailed below and shown graphically in **Figure 26-1**:

- Link 56: Rootas Lane (east);
- Link 57: Walkington Heads;
- Link 64: Old Road (between A164 and Miles Lane);
- Link 67: Station Road;
- Link 68: Aike Lane;
- Link 69: Manor Farm;
- Link 70: North Turnpike;
- Link 72: B1232 – North Frodingham;
- Link 73: Dunnington Lane;
- Link 79: Grange Road;
- Link 81: West Street – West of Leven;
- Link 85: Dunflat Road;
- Link 99: Heighholme Lane; and
- Link 100: Scorborough Lane.

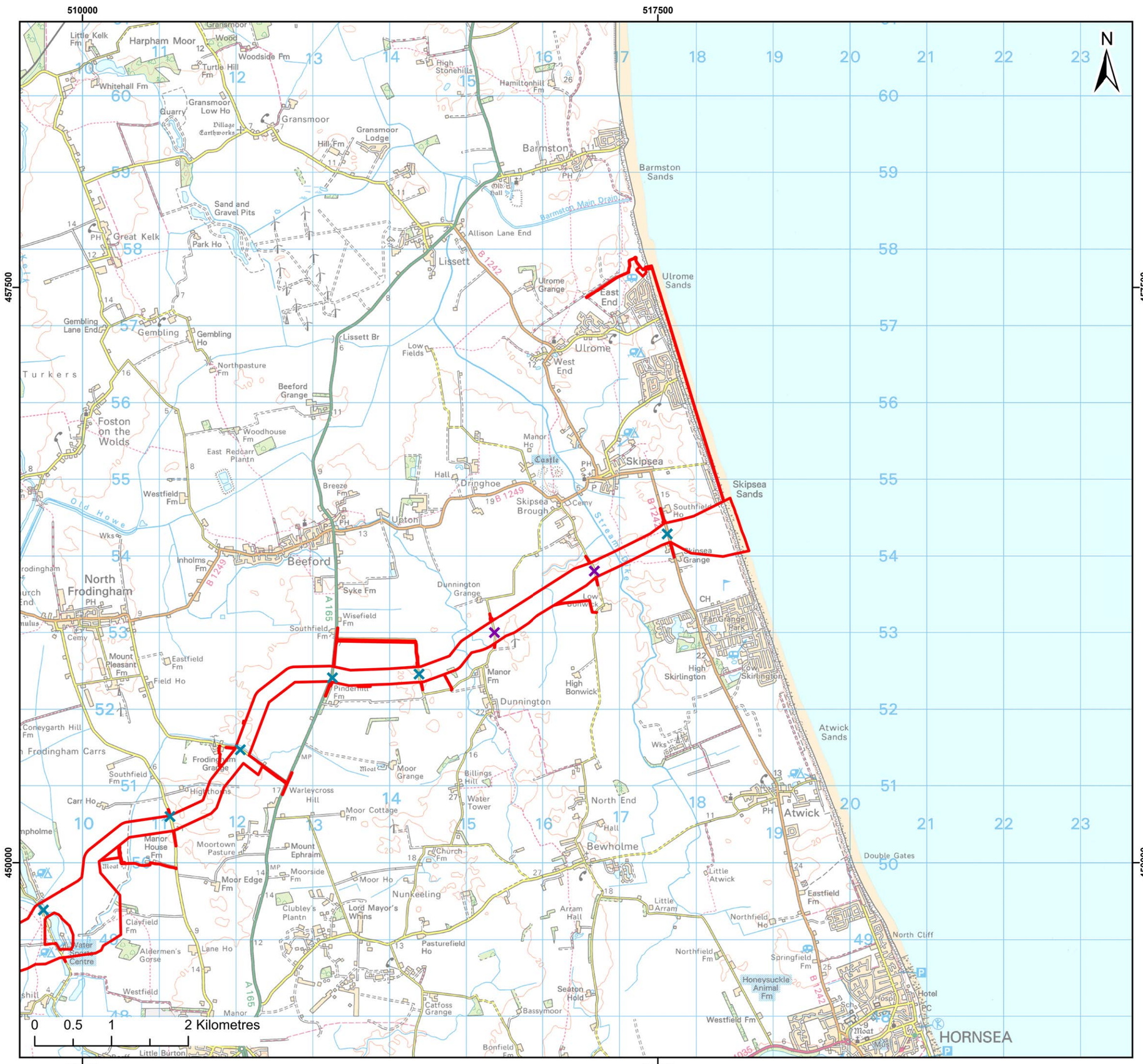
98. These 14 links are deemed sensitive to increases in traffic. A review of their capacity to accommodate HGV (in **Section 26.7.1.7**) has been undertaken to assess their sensitivity to changes in traffic flow. The remaining 77 links are not considered further.

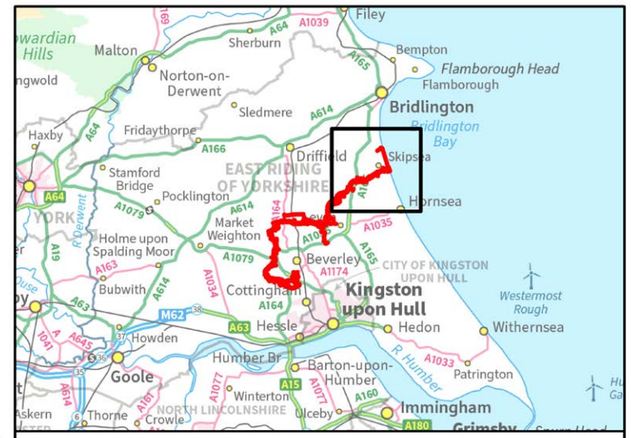
26.5.3.2.2.5. Driver Delay (Road Closures)

99. The onshore ECC would cross approximately 27 public roads. For 21 of these roads, the onshore export cables would be installed using trenchless crossing techniques, allowing the roads to remain open at all times.

100. **Figure 26-2** shows the roads where trenchless crossing techniques would be used, as well as those where open cut trenching techniques may be used for installing the onshore export cables.

101. The six roads proposed to be potentially crossed by open cut trenching techniques are considered sensitive to driver delay (road closure) impacts. The volume and type of users on these roads are examined to determine their sensitivity (see **Section 26.7.1.8**). Access for pedestrians and cyclists at these locations is proposed to be maintained at all times, meaning only drivers may be affected.





Legend:

- Onshore Development Area
- Proposed Road Open Cut Crossings
- Proposed Road Trenchless Crossings

Project:
Dogger Bank D
Offshore Wind Farm

DOGGER BANK WIND FARM

Title:
Proposed Locations of Onshore Export Cable Crossing Locations
- Sheet 1 of 3

Figure:	Drawing No:
26-2	PC6250-RHD-XX-ON-DR-GS-0489

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
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Co-ordinate system: British National Grid

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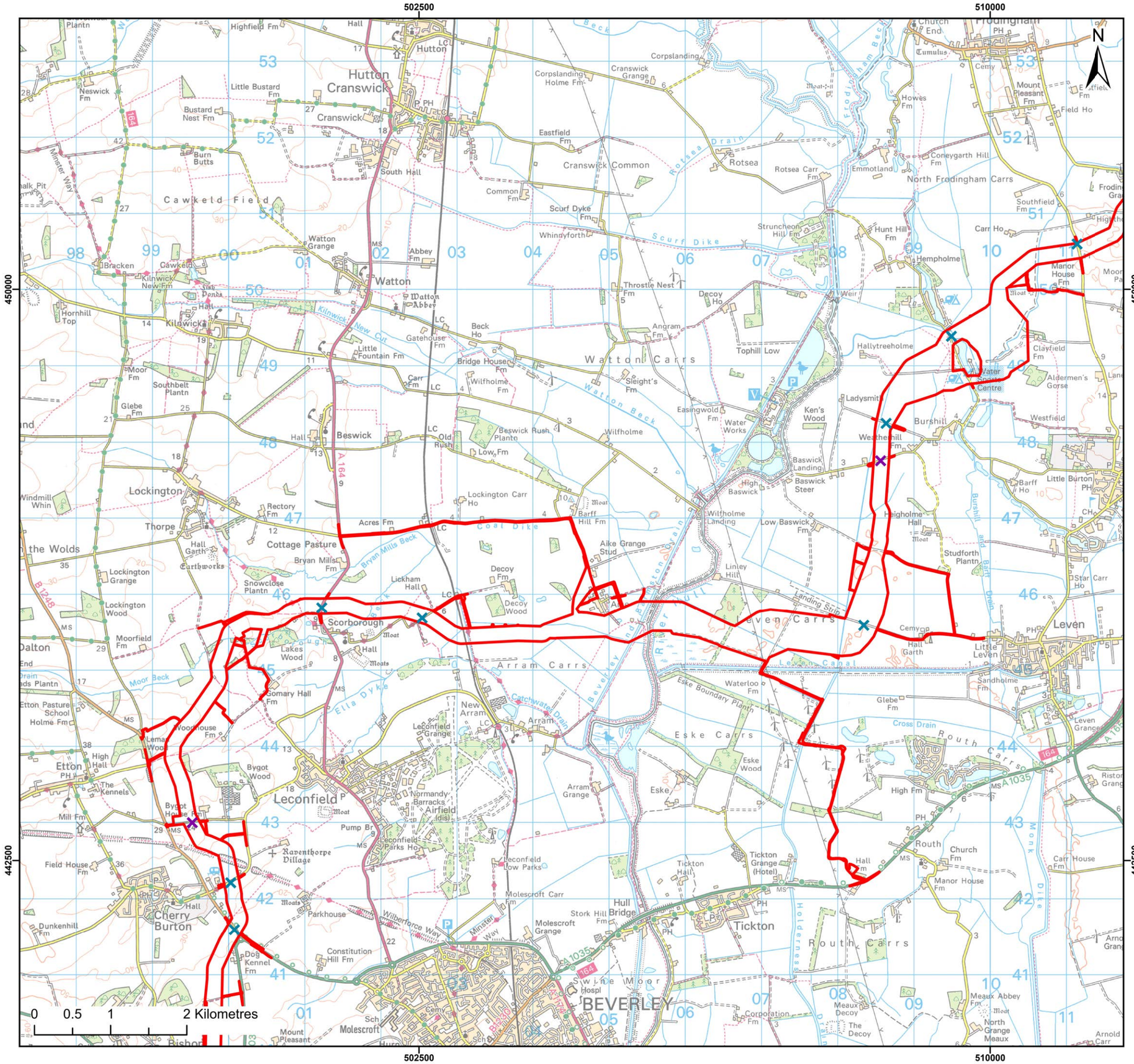

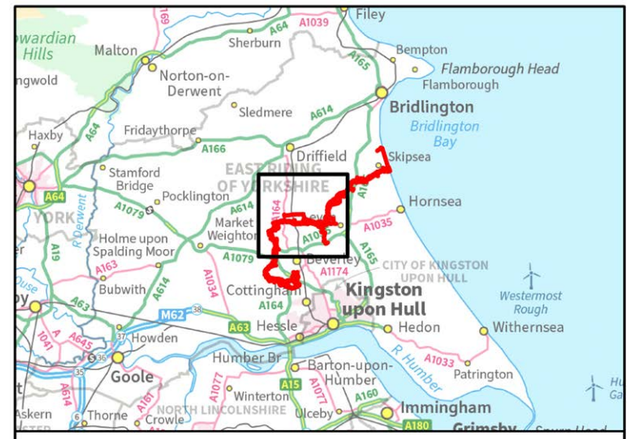

Legend:

- Onshore Development Area
- Proposed Road Open Cut Crossings
- Proposed Road Trenchless Crossings

Project: Dogger Bank D Offshore Wind Farm

DOGGER BANK WIND FARM

Title: Proposed Locations of Onshore Export Cable Crossing Locations - Sheet 2 of 3

Figure: 26-2

Drawing No: PC6250-RHD-XX-ON-DR-GS-0489

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
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02	28/03/2025	JH	AG	A3	1:50,000

Co-ordinate system: British National Grid

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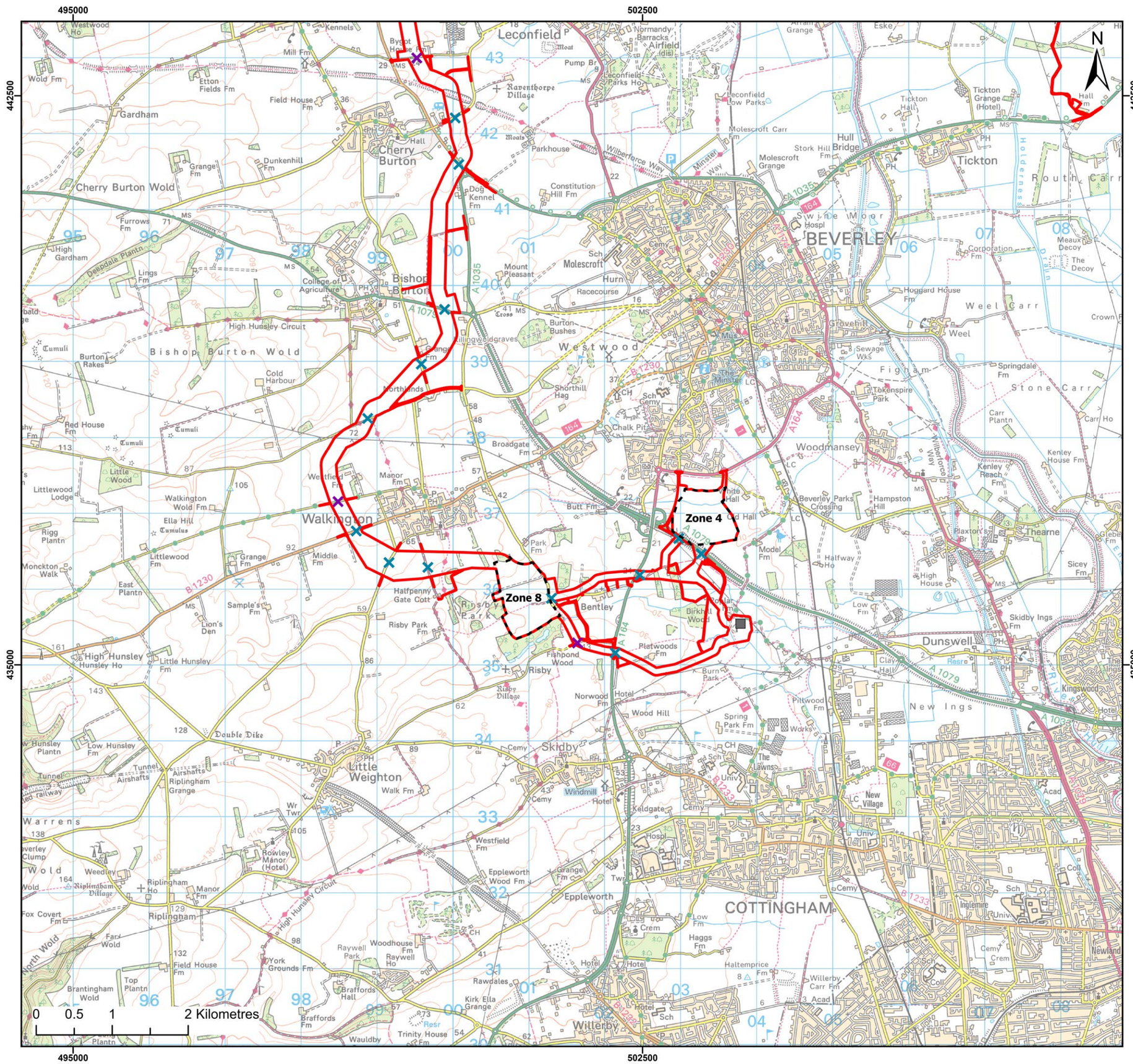

Legend:

- Onshore Development Area
- Onshore Converter Station Zone Options
- Indicative Birkhill Wood Substation Location
- Proposed Road Open Cut Crossings
- Proposed Road Trenchless Crossings

Project: Dogger Bank D Offshore Wind Farm

DOGGER BANK WIND FARM

Title: Proposed Locations of Onshore Export Cable Crossing Locations - Sheet 3 of 3

Figure: 26-2

Drawing No: PC6250-RHD-XX-ON-DR-GS-0489

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
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Co-ordinate system: British National Grid

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26.5.3.3 Impact Magnitude

102. EATM suggests application of the following rules to define the extent and scale of the assessment required:

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

103. In justifying these rules, EATM examines the science of traffic forecasting and states:

"Traffic forecasting is not an exact science, and the accuracy of projections is open to debate. It is generally accepted that accuracies greater than 10% are not achievable. It should also be noted that the day-to-day variation of traffic on a road is frequently at least + or -10%. At a basic level, it should therefore be assumed that projected changes in traffic of less than 10% create no discernible environmental impact."

104. Therefore, changes in traffic flows below the EATM Rules (thresholds) are assumed to result in no discernible or negligible environmental effects and have therefore not been assessed further as part of the assessment.

105. EATM however notes that the Rule 1 and 2 'criteria' process may not be appropriate for some impacts, and it is generally accepted by regulators and practitioners that it should not be applied to assessments of road safety and driver delay. These impacts can be potentially significant for lower changes in traffic flow when high baseline traffic flows are evident. Full details of the methodology adopted for these effects are set out later in this section.

106. Following initial screening, EATM, sets out considerations and, in some cases, thresholds in respect of changes in the volume and composition of traffic to facilitate a subjective judgement of traffic effect and significance.

107. The following sub-sections provide detail of the adopted methodology for assessing traffic and transport impacts.

26.5.3.3.1 Severance

108. Severance is the perceived division that can occur within a community when it becomes separated by a major traffic artery. The term is used to describe a complex series of factors that separate people from places and other people. Severance may result from the difficulty of crossing a heavily trafficked road or a physical barrier created by the road itself. It can also relate to relatively minor traffic flows if they impede pedestrian access to essential facilities. Severance impacts could equally be applied to residents, cyclists, or pedestrians (this includes users of PRoW).

109. EATM suggests that changes in total traffic flow of 30%, 60% and 90% are considered to be slight, moderate, and substantial respectively. These are then transposed to the EIA magnitude of impact matrix (**Table 26-16**) with changes of less than 30% categorised as negligible, 30 – 60% as low, 60 – 90% as medium and over 90% as high respectively. However, EATM notes that these figures should be used cautiously, and the assessment should pay full regard to specific local conditions, e.g. sensitivity of adjacent land uses, prevalence of vulnerable people, whether or not crossing facilities are provided, traffic signal settings, etc.

110. It is identified that the addition of traffic flow to low baseline traffic could present an exaggerated magnitude of change and overestimate the severance effects likely to occur on such links.

26.5.3.3.2 Amenity

111. Amenity is broadly defined as the relative pleasantness of a journey, and is considered to be affected by traffic flow, traffic composition, and separation from traffic. It can affect a range of non-motorised users such as pedestrians, cyclists, and equestrians (this includes users of PRoW).

112. EATM suggests that the significance of changes in pedestrian amenity would be where the traffic flow (or HV component) is halved or doubled, interpreted within the magnitude of impact assessment matrix (**Table 26-16**) as a medium to high magnitude of impact. EATM notes that this threshold should be used cautiously, and the assessment should pay full regard to specific local conditions. This is addressed through the introduction of receptor sensitivity values (**Table 26-18**), whereby lower changes in traffic can lead to significant effects upon high sensitive receptors.

26.5.3.3.3 Fear and Intimidation

113. Pedestrians can experience fear and intimidation related to changes in traffic conditions. These changing conditions can include traffic volumes, speed and HV composition. The levels of fear and intimidation experienced can also be influenced by the proximity of people to traffic.

114. EATM recommends deriving a baseline level of fear and intimidation by appraising the parameters of 18-hour total vehicle flow and average speed for a highway link to determine a degree of hazard of fear and intimidation.

115. A weighting system (presented in **Table 26-13**) has been defined within the EATM to provide an initial approximation of the likelihood of pedestrian fear and intimidation.

116. The degree of hazard is assessed with reference to established thresholds and a 'total hazard score' is provided in **Table 26-13** for each combination on highway links under consideration.

Table 26-13 Fear and Intimidation Degree of Hazard

Average Traffic Flow over 18-Hour Day – Total Vehicles/Hour Two-Way (A)	Total 18-Hour Heavy Vehicle Flow (B)	Average Vehicle Speed (C)	Degree of Hazard Score
+1,800	+3,000	->40	30
1,200 – 1,800	2,000 – 3,000	30 – 40	20
600 – 1,200	1,000 – 2,000	20 – 30	10
<600	<1000	<20	0

117. The 'total hazard score' from all three elements is combined to provide a 'level of fear and intimidation as detailed in **Table 26-14**.

Table 26-14 Levels of Fear and Intimidation

Level of Fear and Intimidation	Total Hazard Score (A) + (B) + (C)
Extreme	71+
Great	41-70
Moderate	21-40
Small	0-20

118. The magnitude of impact is then forecast by comparing the changes in fear and intimidation to baseline conditions, quantified in incremental steps.

26.5.3.3.4 Road Safety (Including Hazardous Loads)

119. EATM outlines two potential approaches to considering road safety effects which can be broadly categorised as follows:

- The 'traditional' approach – whereby the assessor reviews historic collision data to understand existing trends which could be exacerbated by additional traffic from an examination of collision rates or clusters, etc; or
- Safe System approach – whereby a study area is identified using historic collision data (similar to the traditional approach) and then objective modelling techniques are used to establish a baseline and assess the effects of additional traffic.

120. Noting that the Safe System approach is only recently emerging in the UK and is not widely adopted, EATM recommends that the assessor should engage with the relevant highway authorities to determine the best approach for assessing significance of road safety effects.

121. In this context, the approach to considering road safety effects was discussed and agreed with the relevant highway authorities at the second meeting of ETG8 held on 30th September 2024 (see **Volume 2, Appendix 26.1 Consultation Responses for Traffic and Transport**). It involves reviewing recorded collisions occurring within the Traffic and Transport Study Area to identify areas of the highway with concentrations of collisions (clusters) with similar patterns and links with collision rates higher than the national average (for comparable roads). These sites are considered to be sensitive to changes in traffic flows (sensitive receptors) and therefore a more detailed analysis of significance has been undertaken in the context of the proposals to inform a judgement of the magnitude of impacts.

122. In addition to considering existing patterns of collisions, **Volume 2, Appendix 26.2 Transport Assessment** outlines how any new risks associated with the formation of new points of access to the Project would be managed and mitigated.

123. With regard to hazardous loads, the EATM guidance states:

"The traffic and movement assessment needs to clearly outline the estimated number and composition of such loads. Where the number of movements is considered to be significant, the assessment should include a risk or catastrophe analysis to illustrate the potential for an accident to happen and the likely effect of such an event."

124. As such, there will be a requirement to transport potential hazardous loads in the form of battery units associated with the ESBI. These deliveries would be required during construction, operation and decommissioning.

125. During construction, the estimated total number of battery unit deliveries is forecast to be 400 with three battery units per HGV delivery. The Applicant has indicated that a peak daily battery unit delivery frequency of five deliveries per day would be required.

126. During the O&M phase, it is assumed that the battery units will need to be replaced on a 10 to 15 year cycle depending on use over the O&M phase of 35 years. Thus, there is a requirement for 400 battery unit HGV removal trips and 400 new battery unit HGV deliveries. A worst-case scenario is that all battery units would need to be replaced within a one-year period, this would equate to approximately four potential HGV hazardous load trips per day and therefore does not meet the EATM requirement for risk of catastrophe analysis.

26.5.3.3.5 Driver Delay

127. EATM outlines that values for driver delay can be determined by the use of proprietary software packages such as ARCADY for roundabouts, PICADY for priority junctions and LinSig traffic signalised intersections. However, it is noted that delays are only likely to be significant when the surrounding highway network is at, or close to, capacity of the system.

128. During the second meeting of ETG8 held on 30th September 2024 (see **Section 26.3**) with the relevant highway authorities, it was agreed that the assessment of driver delay should consider not only the impact of increases in traffic upon junction capacity but also delays related to highway geometry (e.g. routes where highway width is constrained) and roadworks.

129. The driver delay assessment applies to all vehicle users of the highway network including:

- Cars and light commercial vehicles (LV);
- Motorcyclists;
- Public transport;
- Private transport (e.g. taxis)
- HV; and
- Emergency services.

26.5.3.3.5.1. Driver Delay (Capacity)

130. **Section 26.5.3.2.2.3** presents details of the proposed approach to the assessment of driver delay (capacity) at PEIR.

26.5.3.3.5.2. Driver Delay (Highway Geometry)

131. Road users can also experience delays where the existing width of the highway prevents two vehicles from passing and drivers are required to give-way to each other.

132. A review of the Traffic and Transport Study Area has been undertaken to identify all links where two vehicles would not be able to pass each other (**Section 26.5.3.2.2.4**). An assessment of the potential changes in traffic flows and opportunities for vehicles to pass along these links (e.g. frequency of passing places) has been undertaken to inform a judgement regarding magnitude of impact.

26.5.3.3.5.3. Driver Delay (Road Closures)

133. Road users are likely to experience delays where road or carriageway lane closures (roadworks) are required. Roadworks will be required during construction where open cut techniques are used to install the Project's onshore export cables across the public highway. These locations are identified in **Section 26.5.3.2.2.5** and shown on **Figure 26-2**.

134. To assess the potential effects of roadworks, the assessment considers an initial worst-case where a full road closure is required (i.e. access is not maintained via a single lane closure).

135. To inform a judgement regarding the magnitude of impact, the assessment considers the required length and duration of any detour that may be necessary for diversion.

136. Chapter 8 of the Traffic Signs Manual (Department for Transport, 2009) provides guidance upon when various forms of road works are likely to introduce significant delays. The assessment framework derived from Chapter 8 (Department for Transport, 2009) identifies a duty to inform of possible future delays where works will take longer than a week and introduce delays of over two minutes, or where moderate to severe delays of over 10 minutes are forecast (regardless of duration). Based on this, delays of less than two minutes are considered to result in impacts of negligible magnitude, while delays of more than 10 minutes are considered to have an impact of medium to high magnitude. **Table 26-15** provides a summary of the assessment framework.

26.5.3.3.6 Magnitude of Impact Summary

137. **Table 26-15** details the assessment framework for magnitude thresholds adapted from EATM. These thresholds are guidance only and provide a starting point by which transport data will inform a local analysis augmented by professional judgement of the magnitude of impact.

Table 26-15 Definition of Magnitude of Impacts

Impacts	Magnitude of Impact				
	Negligible		Low	Medium	High
Severance	Change in total traffic flow of less than 30%	Change in total traffic flows of 30 to 60%	Change in total traffic flows of 60 to 90%		Change in total traffic flows of over 90%

Impacts	Magnitude of Impact				
	Negligible		Low	Medium	High
Amenity	Change in traffic flow (or HV composition) of less than 30%	Change in traffic flow (or HV composition) of 30 to 100%	Greater than 100% increase in traffic (or HV composition) and a review based upon the quantum of vehicles, vehicle speed and pedestrian footfall.		
Fear and Intimidation	No change in step changes which are informed by hazard scores.	One step change in level (informed by hazard scores) but with <400 vehicle increase in average 18hr total vehicles two-way total vehicle flow; and/or <500 HV increase in total HV increase in total 18hr HV Flow	One step change in level (informed by hazard scores) but with >400 vehicle increase in average 18hr total vehicles two-way total vehicle flow; and/or >500 HV increase in total HV increase in total 18hr HV Flow	Two step changes in level which are informed by hazard scores.	
Road Safety (including Hazardous Loads)	Informed by a review of existing collision records from within the traffic and transport Study Area and the forecast increase in traffic.				
Driver Delay (Capacity)	Informed by a review of the potential increase in peak hour traffic through sensitive junctions and links.				
Driver Delay (Highway Geometry)	Informed by a review of the potential increase in daily and peak hour traffic through sensitive links.				
Driver Delay (Road Closures)	No or single lane road closure required, or delays of less than two minutes.	Delays of two to ten minutes	Delays over ten minutes and a review based upon the quantum of vehicles and scheduled buses.		

26.5.3.3.7 Effect Significance

138. The assessment of the significance of an effect is informed by the sensitivity of the receptor (outlined in **Section 26.5.3.2.2**) and the magnitude of the impact (**Section 26.5.3.3**). The determination of significance is guided by the use of a traffic and transport significance of effect matrix, as shown in **Table 26-16**. Definitions of each level of significance are provided in **Table 26-17**. For the purposes of this assessment, any effect that is of major or moderate significance is considered to be significant in EIA terms, whether this be adverse or beneficial. Any effect that has a significance of minor or negligible is not significant.

Table 26-16 Traffic and Transport Significance of Effect Matrix

		Adverse Effect				Beneficial Effect			
		Impact Magnitude							
		High	Medium	Low	Negligible	Negligible	Low	Medium	High
Receptor Sensitivity	High	Major	Major	Moderate	Minor	Minor	Moderate	Major	Major
	Medium	Major	Moderate	Minor	Minor	Minor	Minor	Moderate	Major
	Low	Moderate	Minor	Minor	Negligible	Negligible	Minor	Minor	Moderate
	Negligible	Minor	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Minor

Table 26-17 Definition of Effect Significance

Significance	Definition
Major	Very large or large change in receptor condition, which is likely to be important considerations at a regional or district level because they contribute to achieving national, regional or local objectives, or could result in exceedance of statutory objectives and / or breaches of legislation.
Moderate	Intermediate change in receptor condition, which is likely to be important considerations at a local level.
Minor	Small change in receptor condition, which may be raised as local issues but are unlikely to be important in the decision making process.
Negligible	No discernible change in receptor condition.
No change	No impact, therefore, no change in receptor condition.

26.5.4 Cumulative Effects Assessment Methodology

139. The cumulative effects assessment (CEA) considers other plans and projects that may act collectively with the Project to give rise to cumulative effects on traffic and transport receptors. The general approach to the CEA for traffic and transport involves screening for potential cumulative effects, identifying a short list of plans and projects for consideration and evaluating the significance of cumulative effects. **Chapter 6 Environmental Impact Assessment Methodology** and **Volume 2, Appendix 6.5 Cumulative Effects Screening Report – Onshore** provide further details on the general framework and approach to the CEA.

140. The final assessment of cumulative effects will be undertaken during the later stages of the EIA and presented in the ES. However, for the purposes of the PEIR, it is possible to identify a short list of projects and plans which are likely to feature in that assessment and consider the extent to which cumulative effects might arise. **Section 26.8** presents the following preliminary information regarding cumulative effects:

- Screening for cumulative effects; and
- A preliminary short list of plans and projects considered for CEA, including a brief description as to how projects have been screened in and the initial tier level have been assigned.

26.5.5 Assumptions and Limitations

141. This chapter provides a preliminary assessment of the likely significant effects of the Project in relation to traffic and transport using information available at the time of drafting as described in **Chapter 6 Environmental Impact Assessment Methodology**. This assessment will be refined and presented in the ES to be submitted with the DCO application.

142. The impacts of the A63 Castle Street Improvements Scheme on traffic flows have influenced the approach to baseline data collection as outlined in the accompanying **Volume 2, Appendix 26.2 Transport Assessment**.

143. Where routine assumptions have been made in the course of undertaking the assessment, these are noted in **Sections 26.6** to **26.8** and the accompanying **Volume 2, Appendix 26.2 Transport Assessment**.

26.6 Baseline Environment

26.6.1 Existing Baseline

144. As set out in **Section 26.5.2**, characterisation of the baseline environment in relation to traffic and transport has been informed by a number of sources, including:

- Desktop studies and site visits;
- Personal injury collision data sourced from EYRC and Hull City Council;
- Traffic count information sourced from the Department for Transport;
- Traffic count information sourced from other projects; and
- Traffic surveys commissioned for the Project.

145. Characteristics for all 91 links within the Traffic and Transport Study Area are detailed in the following sections:

- The estimated future traffic flows (**Table 26-20)**;
- An audit of the sensitive receptors in the Traffic and Transport Study Area (**Section 26.6.1.3**);
- A detailed review of the baseline road safety conditions (**Section 26.6.1.4**); and
- An audit of the Traffic and Transport Study Area based on the highway geometry (**Section 26.7.1.7**).

26.6.1.1 Existing Highway Network

146. This section provides a broad overview of the baseline characteristics of the 91 links forming the Traffic and Transport Study Area. These links are illustrated in **Figure 26-1**.

147. The Principal (A) road network in the Traffic and Transport Study Area includes the A1033, A1165 and A165, managed by Hull City Council, and the A164, A165, A1035, A1079 and A1174, managed by ERYC.

148. The A15 and the A63 (within the Traffic and Transport Study Area) form part of the Strategic Road Network (SRN) managed by National Highways.

26.6.1.1.1 Strategic Road Network

149. The A63 provides a key strategic connection in East Yorkshire between Leeds and Hull. The A63 has key intersections with the A15 to the south and the A164 and A1033 to the north.

150. Within the Traffic and Transport Study Area, the A63 comprises of a dual carriageway throughout with both at-grade and grade separated junctions.

151. National Highways are currently constructing improvements to the A63 known as the 'A63 Castle Street Improvements Scheme'. The improvements are scheduled to be open in Spring 2026 and are proposed to relieve congestion and provide better access to the Port of Hull by improving the A63 Castle Street.

26.6.1.1.2 A-Roads (East Riding of Yorkshire Council and Hull City Council Areas)

152. The A1035 is a predominantly single-lane single carriageway road that heads west from a roundabout with the A165 to the east of the village of Leven, passing to the north of Beverley, and linking up with the A1079 to the east of Bishop Burton. A short section of the A1035 to the east of Leven is provided as dual carriageway. The traffic-free NCR 1 is parallel to the A1035 Constitution Hill, north-west of Beverley. Footways are also present along the A1035 within proximity of existing developments.

153. The A1079 connects York and Hull. Within the Traffic and Transport Study Area, the A1079 is a single-lane single carriageway road (except for a short stretch at the junction with the A164) that routes from Hull to the south of Beverley before linking up with the A1035 close to Bishop Burton.

154. The A164 is a cross-country road in East Yorkshire, which travels north from Hessle to Driffield, bypassing the City of Hull to the west of the city. Within the traffic and transport Study Area, the A164 links the A63 (to the south of Hull) with the A1035 (to the east of Beverley). The A164 is predominantly a single lane single carriageway road except for its extent between the Castle Road roundabout and the B1232 roundabout. There are footways present along the A164 within proximity of existing developments.

155. ERYC is currently constructing improvements to the junction of the A1079 and A164, known as the 'Jock's Lodge Junction Improvements Scheme'. The improvements are proposed to be complete by 2026 and are designed to improve safety and capacity at the junction.

156. The A165 links Scarborough and Hull. Within the Traffic and Transport Study Area, the A165 routes south from Carnaby through Lissett, Beeford, Brandesburton and Leven to the roundabout between it and the A1035. After which, the A165 continues south into Hull, until its junction with the A1033. The A165 is predominantly a single-lane carriageway road with footways present within proximity of developed areas. Between the Brandesburton roundabout and the White Cross roundabout, the A165 is a four-lane dual carriageway.

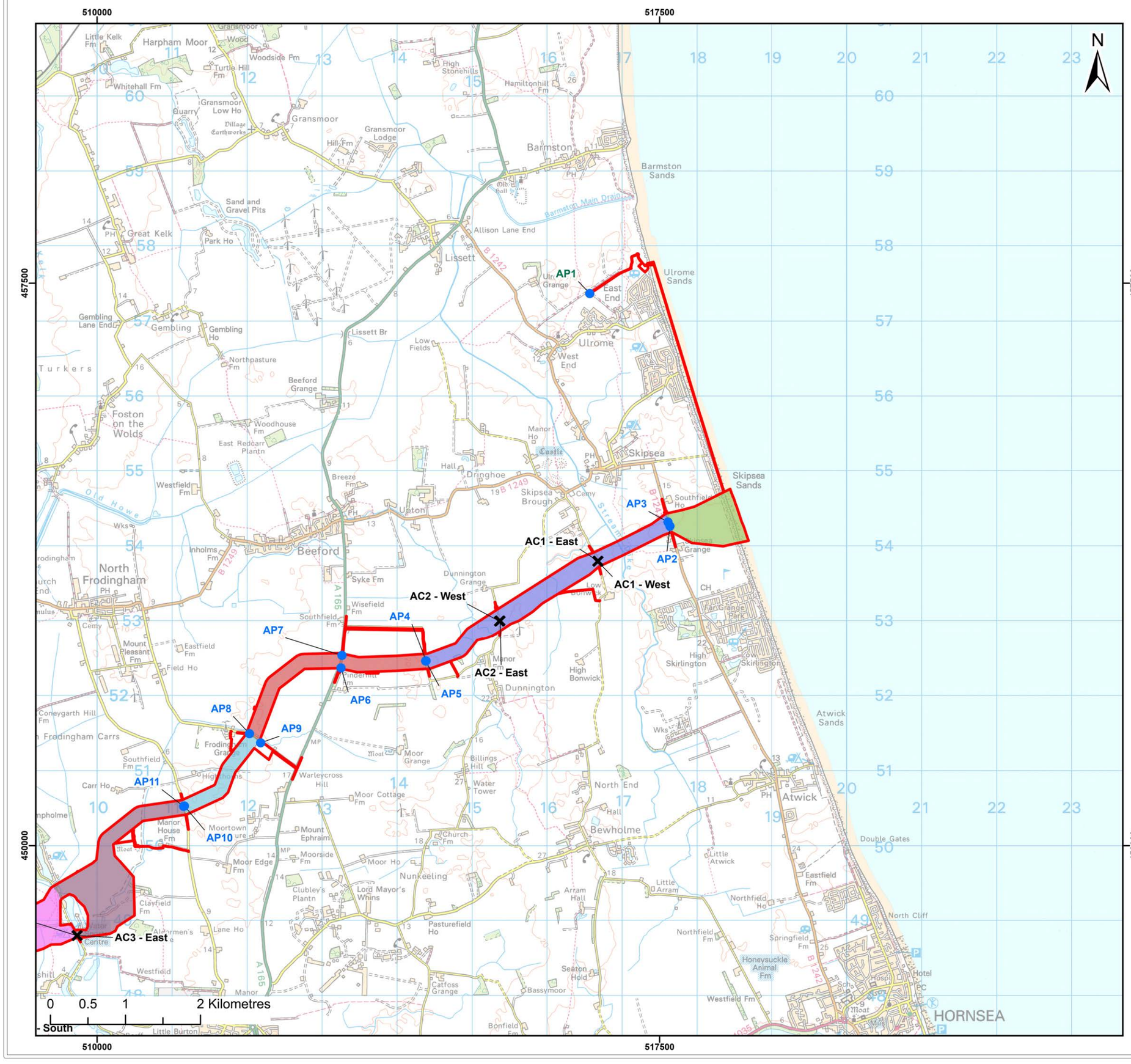
157. The A1174 is a single carriageway A-road that provides a link between the A1079 (to the north of Hull) and the A1035 (to the east of Beverley). Within the Traffic and Transport Study Area, a continuous footway / cycleway is provided alongside the A1174.

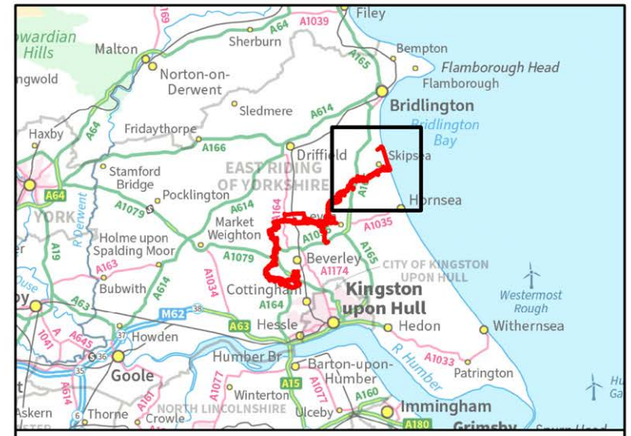
158. The A1033 provides a north westerly link between the A63 and A165 in Hull and the A1079 to the south-west of Beverley. An off-road footway/cycleway is provided alongside the majority of the route.

26.6.1.1.3 B-Roads and Other Local Roads

159. From the main A road network, to access many of the proposed construction access points for the Project, construction vehicles would need to utilise the local road network for a short part of their journey.

160. **Figure 26-3** depicts the proposed access locations, whilst the transport assessment (see **Volume 2, Appendix 26.2 Transport Assessment**) provides a description of the proposed routes that construction traffic would use to access each of the accesses from the main A road network.





Legend:

- Onshore Development Area
- Proposed Haul Road Crossings
- Proposed Construction Accesses

Indicative Onshore Export Cable Corridor Sections

- Section 1
- Section 2
- Section 3
- Section 4
- Section 5
- Section 6

Project:

Dogger Bank D Offshore Wind Farm

DOGGER BANK WIND FARM

Title:

Proposed Construction Accesses, Haul Road Crossings and Onshore Export Cable Corridor Sections - Sheet 1 of 3

Figure: 26-3

Drawing No: PC6250-RHD-XX-ON-DR-GS-0488

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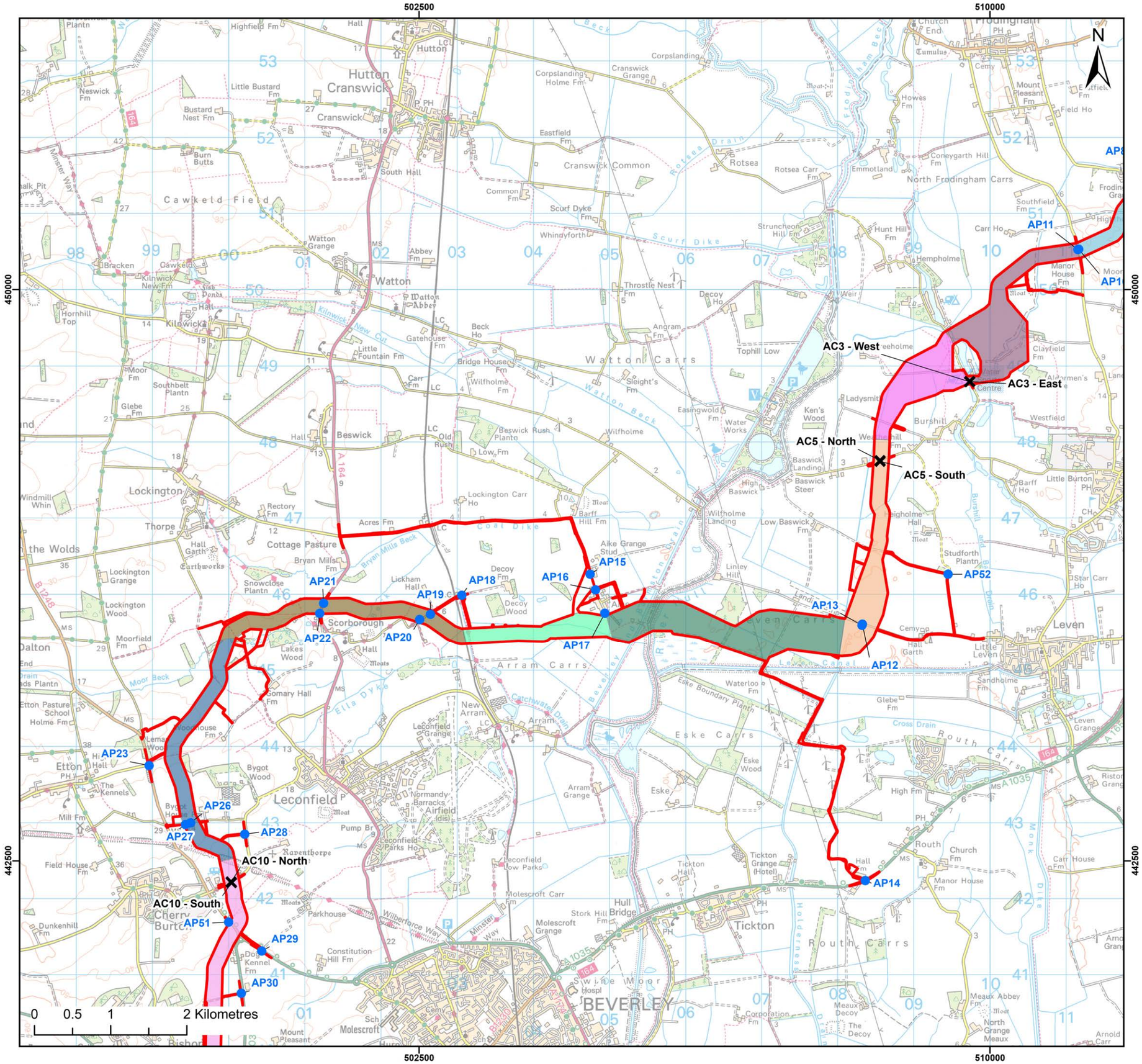

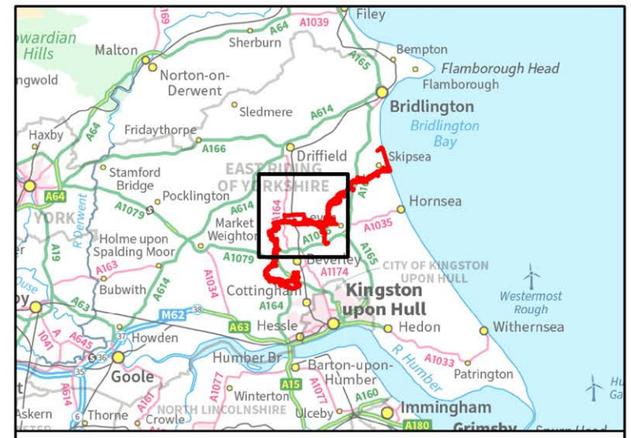

Legend:

- Onshore Development Area
- Proposed Haul Road Crossings
- Proposed Construction Accesses

Indicative Onshore Export Cable Corridor Sections

- Section 4
- Section 5
- Section 6
- Section 7
- Section 8
- Section 9
- Section 10
- Section 11
- Section 12

Project:

Dogger Bank D
Offshore Wind Farm

DOGGER BANK WIND FARM

Title:

Proposed Construction Accesses, Haul Road Crossings and Onshore Export Cable Corridor Sections
- Sheet 2 of 3

Figure: 26-3

Drawing No: PC6250-RHD-XX-ON-DR-GS-0488

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Co-ordinate system: British National Grid

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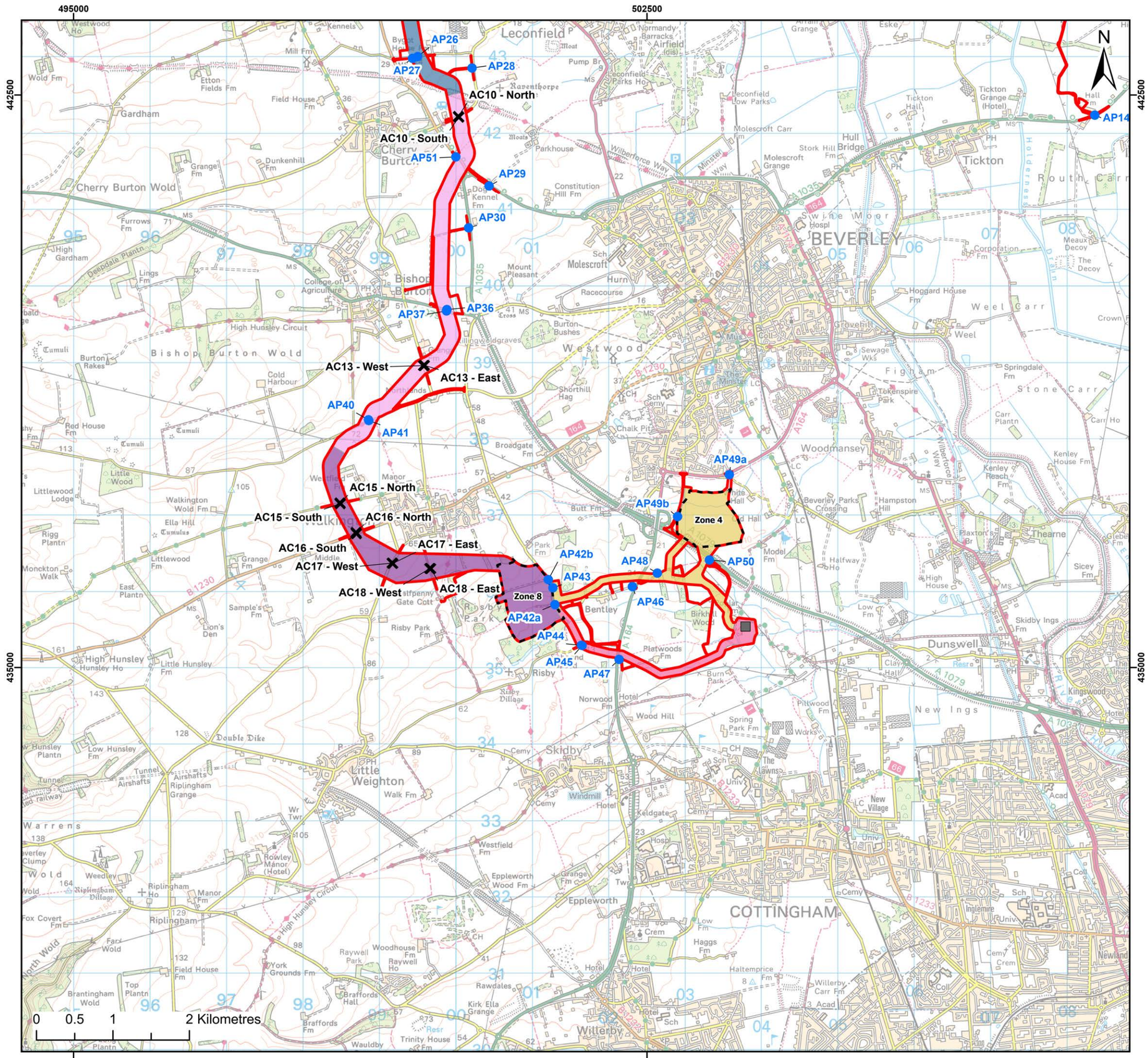

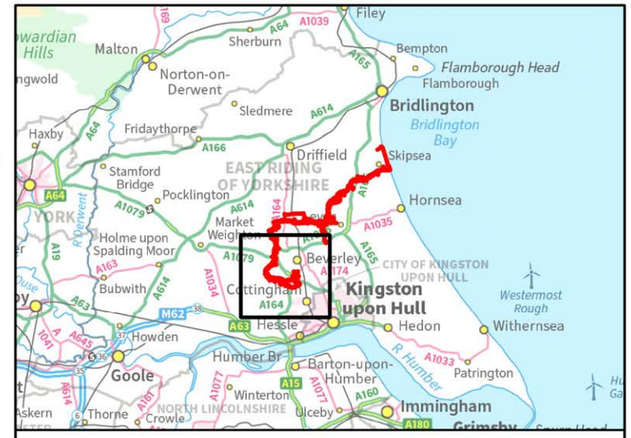

Legend:

- Onshore Development Area
- Onshore Converter Station Zone Options
- Proposed Haul Road Crossings
- Proposed Construction Accesses
- Indicative Birkhill Wood Substation Location

Indicative Onshore Export Cable Corridor Sections

- Section 11
- Section 12
- Section 13
- Section 14N
- Section 14S

Project:
Dogger Bank D
Offshore Wind Farm

DOGGER BANK WIND FARM

Title:
Proposed Construction Accesses, Haul Road Crossings and Onshore Export Cable Corridor Sections
- Sheet 3 of 3

Figure: 26-3
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26.6.1.2 Traffic Flow Data

161. Traffic flow data for 89 out of 91 links within the Traffic and Transport Study Area have been informed by traffic counts. **Volume 2, Appendix 26.2 Transport Assessment** contains full details of these counts, and a summary of the baseline traffic flows for all links within the Traffic and Transport Study Area.

162. For Links 69 and 70, the traffic flows have been estimated. They are rural minor routes providing access to a small hamlet and the beach respectively.

163. Current Transport Analysis Guidance (Department for Transport, 2020) directs that assessment of traffic impacts should be based on normal ('neutral') conditions (i.e. not during school holidays). Neutral months are defined as March to July and September to November. This approach is also in keeping with highway network management practice across the UK.

164. In accordance with current guidance, background traffic flows (contained in **Section 26.6.2**) are therefore representative of neutral traffic conditions. The adoption of neutral conditions represents a robust baseline as it provides a better indicator of the magnitude of impact of the Project's traffic, whereas an elevated baseline, would inadvertently reduce the magnitude of impact based on the percentage increase in traffic.

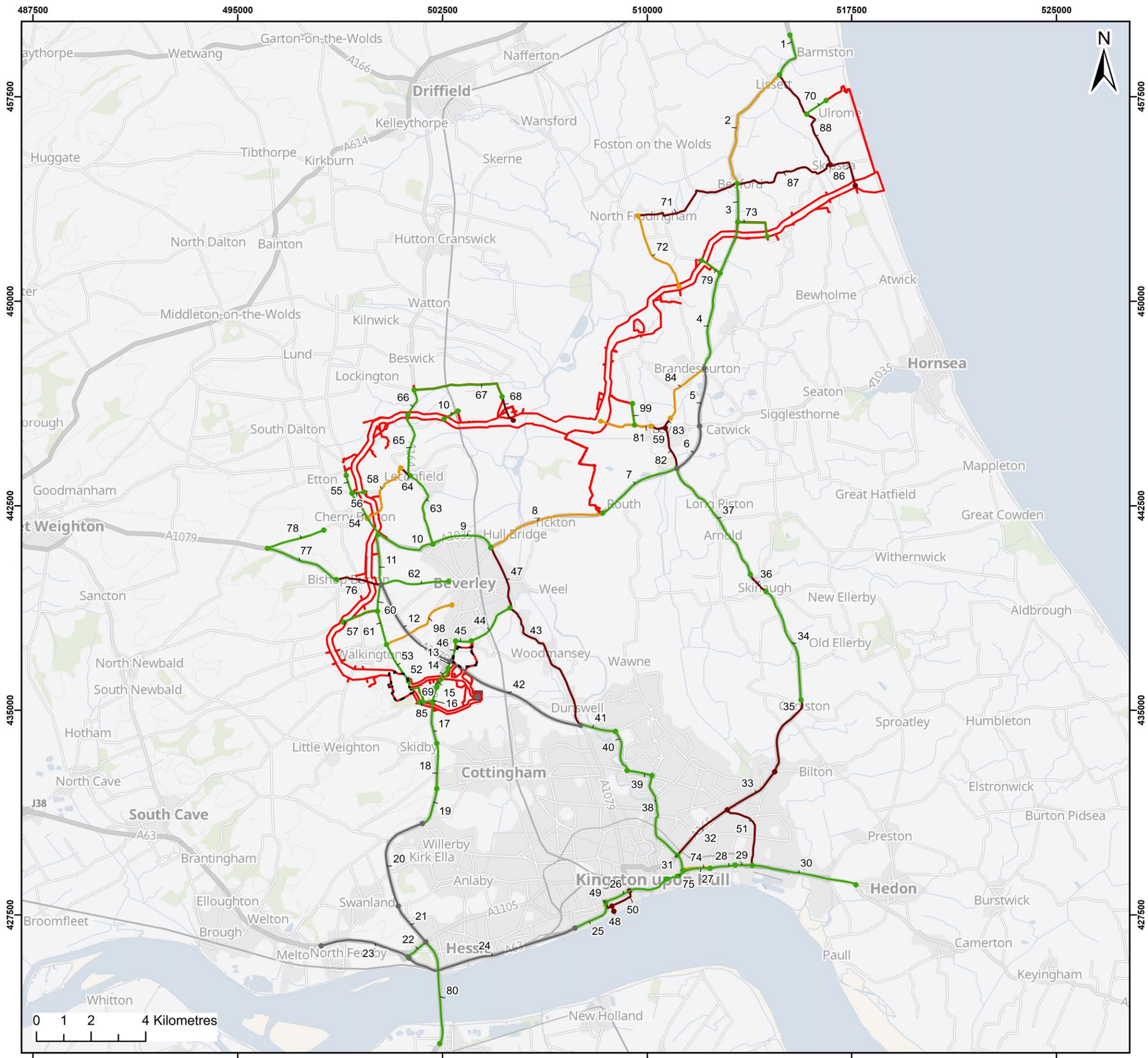
165. The term HV (Heavy Vehicle) relates to predominately baseline flows and includes coaches/buses as well as other commercial vehicles over 3.5 tonnes. The term HGV (Heavy Goods Vehicle) predominately relates to construction traffic over 3.5 tonnes and can include vehicle types such as tippers, articulated lorries and concrete mixer trucks. Notwithstanding the terms HV and HGV are interchangeable.

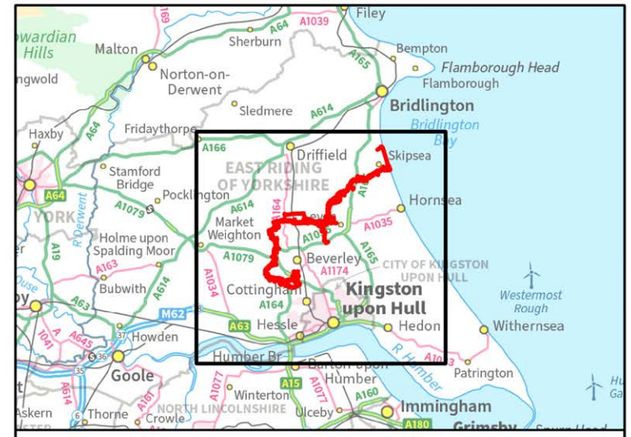
166. This general default approach was agreed with the relevant highway authorities during the second meeting of ETG8 held on 30th September 2024 as outlined within **Volume 2, Appendix 26.1 Consultation Responses for Traffic and Transport**.

26.6.1.3 Link Based Sensitive Receptors

167. The sensitivity of a road (link) can be defined by the type of user groups who may use it. A sensitive area may, for example, be a village environment or where pedestrian or cyclist activity may be high, for example near a school. **Table 26-18** provides broad definitions of the different sensitivity levels (derived from EATM) which have been applied to the assessment.

168. A desktop exercise, augmented by site visits, has been undertaken to identify the sensitive receptors in the Traffic and Transport Study Area. Broad definitions of the different sensitivity levels (derived from EATM) are provided in **Table 26-18** which have been applied to the assessment of severance and amenity. All 91 links within the Traffic and Transport Study Area have been assessed and assigned a sensitivity. **Figure 26-4** illustrates these routes graphically.





Legend:

- Onshore Development Area
- Onshore Converter Station Zone Options
- Indicative Birkhill Wood Substation Location

Sensitivity

- High
- Medium
- Low
- Negligible

Project:

Dogger Bank D Offshore Wind Farm

DOGGER BANK WIND FARM

Title:

Link Based Sensitive Receptors

Figure: 26-4

Drawing No: PC6250-RHD-XX-ON-DR-GS-0490

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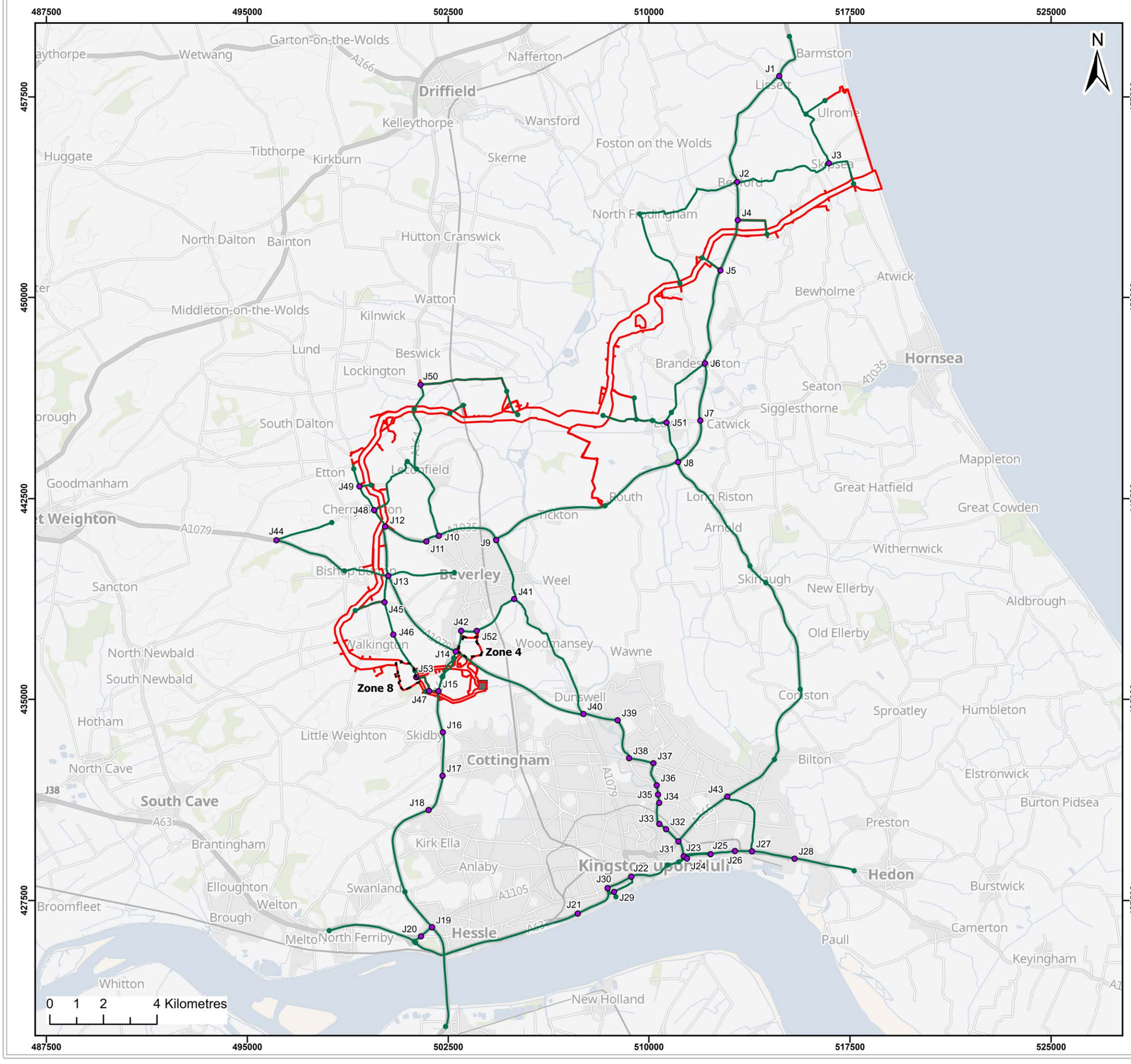

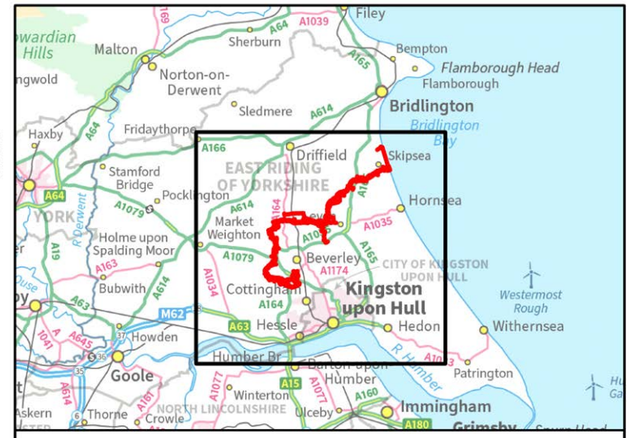

Legend:

- Onshore Development Area
- Onshore Converter Station Zone Options
- Indicative Birkhill Wood Substation Location
- Sensitive Junction Locations
- Links

Project: Dogger Bank D Offshore Wind Farm

DOGGER BANK WIND FARM

Title: Potential Sensitive Junction Locations

Figure: 26-5

Drawing No: PC6250-RHD-XX-ON-DR-GS-0491

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Table 26-18 Link Based Sensitive Receptors

Link ID	Link Description	Link Sensitivity		Rationale for Applied Link Sensitivity
1	A165 north of Allison Lane	Low		A-road with sporadic frontage development.
2	A165 between Allison Lane and Skipsea Road	Medium		A-road with a low number of receptors for the majority of the link with a larger number of diverse receptors as the link heads into Beeford village.
3	A165 Between Skipsea Road and Grange Road	Low		A-road with sporadic frontage development.
4	A165 Between Grange Road and Brandesburton Roundabout	Low		A-road with sporadic frontage development.
5	A165 between A1035 and New Road	Negligible		A-road with no receptors along the link.
6	A1035 between Leven Roundabout and White Cross Roundabout	Negligible		A-road with no receptors along the link.
7	A1035 between White Cross Roundabout and Hall Farm	Low		A-road with sporadic frontage development. A footway / cycleway is provided alongside the link. The cycle route forms part of NCR 164.
8	A1035 between Hall Farm and Swinemoor Lane Roundabout	Medium		A-road with some frontage development including residential properties and commercial development. A footway / cycleway is provided alongside the link. The cycle route forms part of NCR 164.
9	A1035 between Swinemoor Roundabout and Driffiled Roundabout	Low		A-road with sporadic frontage development. A footway / cycleway is provided alongside the link. This link is crossed by the Molescroft Footpath Number 2 (MOLEF02) and Molescroft Footpath number 6 (MOLEF06) PRoW.
10	A1035 between Driffiled Roundabout and Dog Kennel Lane Roundabout	Low		A-road with sporadic frontage development. A footway / cycleway is provided alongside the link. The cycle route forms part of NCR 1.
11	A1035 between Dog Kennel Lane Roundabout and Killingravesworld Roundabout	Low		A-road with sporadic frontage development.
12	A1035 between Killingravesworld Roundabout and Jocks Lodge Roundabout	Negligible		A-road with no sensitive receptors along the link.
13	A164 Jocks Lodge between A1079 and A164 northern diverge point	Low		A-road with limited frontage development.
14	A164 Northbound only from southern diverge point	Low		A new A-road with limited frontage development. The link will be crossed by a new grade separated crossing and a new Bridleway crossing via a Pegasus crossing.
15	A164 southbound only from northern diverge point	Low		A new A-road with limited frontage development. A new bridleway will be provided alongside the link. The link will be crossed by a new Bridleway via a Pegasus crossing.
16	A164 from Southern diverge point to Dunflat Road	Low		A-road with limited frontage development. A footway is provided alongside the link.
17	A164 between Dunflat Road and the B1233	Low		A-road with limited frontage development. A footway is provided alongside the link. The link is crossed by a the Skidby Footpath Number 16 (SKIDF16) PRoW.

Link ID	Link Description	Link Sensitivity		Rationale for Applied Link Sensitivity
18	A164 between B1233 and Castle Road	Low		A-road with no frontage development. A footway is provided alongside the link for a short distance.
19	A164 between Castle Road and the B1232	Low		A-road with limited frontage development.
20	A164 between the B1232 and B1231	Negligible		A-road with no sensitive receptors along the link.
21	A164 between the B1231 and Boothferry Road	Negligible		A-road with no sensitive receptors along the link.
22	A15 - Boothferry Road	Low		A-road with few sensitive receptors along the link and a wide footway / cycleway alongside the main carriageway linked by controlled crossings.
23	A63 - Hull West	Negligible		A-road with no sensitive receptors along the link.
24	A63 between Boothferry Road and the A1166	Negligible		A-road with no sensitive receptors along the link.
25	A63 between the A1166 and Daltry Street	Low		A-road with a low number of sensitive receptors along the link. A footway is provided alongside part of the to allow pedestrians and cyclists to cross the carriageway safely via bridges, underpasses and signalised crossings.
26	A63 between Daltry Street and the A1165	Low		A-road with a low number of sensitive receptors along the link. A footway is provided alongside part of the to allow pedestrians and cyclists to cross the carriageway safely via bridges, underpasses and signalised crossings.
27	A63 between the A1165 and Southcoates Roundabout	Low		A-road with no receptors along the link.
28	A1033 (between Southcoates Roundabout to Northern Gateway	Low		A-road with sporadic frontage development and a wide footway / cycleway alongside the main carriageway linked by controlled crossings.
29	A1033 (between Northern Gateway and Marfleet Roundabout)	Low		A-road with sporadic frontage development and a wide footway / cycleway alongside the main carriageway linked by controlled crossings.
30	A1033 (between Marfleet Roundabout and B1362)	Low		A-road with a low number of sensitive receptors and a footway / cycleway alongside the main carriageway linked by a controlled crossing.
31	A1033 (between Mount Pleasant North Roundabout and A165 Holderness Road)	Low		A-road with sporadic frontage development, primarily consisting of commercial properties. A footway / cycleway is provided alongside the road linked by controlled crossings.
32	A165 Holderness Road (between A1033 and Maybury Road)	High		A-road passing through an area of dense residential and commercial development, including public houses, doctor's surgery and supermarkets, with limited separation between the footway and carriageway with on-road cycleways.
33	A165 Holderness Road (between Maybury Road and Main Road)	High		A-road which has limited frontage development and separation between the carriageway and footway.
34	A165 (between Main Road and Main Street)	Low		A-road with a sporadic frontage development. The link is crossed by NCR 65 and the Ellerby Bridleway No 7 (ELBYB07).
35	A165 (between Main Street and Skirlaugh)	High		A-road that passes residential developments with limited separation between the footway and carriageway.
36	A165 - Skirlaugh	High		A-road which passes through the village of Skirlaugh. Within the village of Skirlaugh there are residential and commercial frontage development along the roads as well as a public house. There is limited separation between the carriageway and the footway through the village.

Link ID	Link Description	Link Sensitivity		Rationale for Applied Link Sensitivity
37	A165 (between Skirlaugh and the A1035)	Low		A-road which bypasses the village of Long Riston. There is sporadic frontage development adjacent to the link.
38	A1033 (between Holderness Road and Sutton Road)	Low		A-roads with limited sensitive receptors. A footway / cycleway is provided alongside the road.
39	A1033 (between Howell Road and Stockholme Road)	Low		A-roads with limited sensitive receptors. A footway / cycleway is provided alongside the road.
40	A1033 (between Stockholm Road and Roebank Roundabout)	Low		A-road with limited frontage development, the link however provides access to a leisure centre. A footway / cycleway is provided alongside the road which is set back from the edge of the road and linked by controlled and uncontrolled crossings.
41	A1033 (between Roebank Roundabout and Dunswell Roundabout)	Low		A-roads with limited sensitive receptors. A footway / cycleway is provided alongside the road.
42	A1079 (between Dunswell Roundabout and Jocks Lodge Roundabout)	Negligible		A-road with no frontage development.
43	A1174 (between Dunswell Roundabout and the A164)	High		A-road with a high number of sensitive receptors, including residential properties, commercial development and primary schools. A footway/cycleway is provided alongside the link.
44	A164 (between Ward Way and the A1174)	Low		A-road with limited frontage development. A footway/cycleway is provided alongside the link.
45	A164 (between the A1174 and Jocks Lodge)	Low		A-road with limited frontage development. A footway/cycleway is provided alongside the link.
46	Jocks Lodge (between Minster Way and the A1079)	Low		A-road with limited frontage development and a footway is provided alongside the link.
47	A1174 (between Dunswell Roundabout and the A164)	High		A-road with a high number of sensitive receptors, including a hospital, residential properties, commercial and industrial development. A footway / cycleway is provided alongside the link. The cycle route forms part of NCR 164.
48	Neptune Street	Low		Unclassified road through a densely developed commercial area leading to Abert Docks. Footway provided along the entirely of the link.
49	Jackson Street/ Daltry Street	Low		A-road with a low number of sensitive receptors along the link. A footway is provided alongside part of the to allow pedestrians and cyclists to cross the carriageway safely via bridges, underpasses and signalised crossings.
50	English Street/ Kingston Street/Commercial Road	Low		An unclassified road through a densely developed commercial area. Footway provided along the entirely of the link.
51	Maybury Road/Marfleet Lane	High		An unclassified road with a high number of residential and commercial frontage developments along the entire link. A footway and cycle path are provided along the majority of the link.
52	Coppleflat Lane between A164 to OCS	Low		An unclassified road with no footway or frontage development.
53	Bentley Lane between OCS and Broadgate	Low		An unclassified road with no footway or frontage development.
54	B1248 (between the A1035 and Rootas Lane)	Low		B-road with no frontage development.
55	B1248 (between Rootas Lane and Main Street)	Low		B-road with no frontage development.
56	Rootas Lane (east)	Low		Unclassified road with no frontage development.

Link ID	Link Description	Link Sensitivity		Rationale for Applied Link Sensitivity
57	Walkington Heads	Low		Unclassified road with sporadic frontage development.
58	Leconfield Road / Miles Lane	Medium		Unclassified road with a concentration of residential frontage development as the link enters Leconfield. A footway is provided along the residential section of the link.
59	West Street - Leven	High		Unclassified road with residential and commercial frontage development. A footway is provided.
60	Killingwoldgraves Lane	Low		Unclassified road with sporadic frontage development.
61	Coppleflat Lane (between Walkington Heads and Broadgate)	Low		Unclassified road with sporadic frontage development.
62	York Road	Low		A-road with sporadic frontage development. A footway is provided alongside the link.
63	A164 (between Driffiled Road Roundabout and Old Road)	Low		A-road which provides access to the Beverley Ambulance Station and Leconfield town. A footway is provided alongside the link.
64	Old Road (between A164 and Miles Lane)	High		Unclassified road with residential frontage along the road as the link enters Leconsfield. A footway is provided alongside the link.
65	A164 (between Old Road and Opnshore EEC)	Low		A-road no frontage development. No footway is present.
66	A164 (between Onshore EEC and Station Road)	Low		A-road with sporadic frontage development.
67	Station Road	Low		Unclassified road with sporadic frontage development.
68	Aike Lane	High		Unclassified road with sporadic residential and commercial frontage development. A concentration of residential frontage is present as the link enters Aike.
69	Manor Farm Cottages	Low		A-road with limited frontage development. A footway is provided alongside the link.
70	North Turnpike	Low		Unclassified road with no receptors.
71	B1249 (Bridlington Balk)	High		B-road which passes through villages at both ends of the link with frontage developments, including residential and commercial properties, two primary schools, a church and a community centre. A footway is provided through the village. Between the villages, the link features sporadic residential frontage with no footway.
72	North Froddingham Road	Medium		Unclassified road with sporadic frontage development until North Frodingham where there is a concentration of residential frontage. A footway is present along the residential cluster.
73	Dunnington Lane	Low		Unclassified road with no identified receptors along the link.
74	A1033 (between Mount Pleasant North Roundabout and Southcoates Roundabout)	Medium		A-road which passes several commercial, residential and industrial developments as well as a prison and a public house. A footway / cycleway is provided alongside the main carriageway linked by controlled crossings.
75	A63 (Off ramp to Mount Pleasant North Roundabout)	Low		A-road with a low number of sensitive receptors along the link. A footway is provided alongside part of the to allow pedestrians and cyclists to cross the carriageway safely via bridges, underpasses and signalised crossings.
76	A1079 (between Killingravesworld Roundabout and west Bishop Burton)	High		A-road with a concentration of frontage development including residential properties and a public house as the link enters Bishop Burton. A footway is provided alongside the road.

Link ID	Link Description	Link Sensitivity		Rationale for Applied Link Sensitivity
77	A1079 (between Bishop Burton and Highgate)	Low		A-road with the only identified receptor along the link being Bishop Burton College. No footway is present.
78	Highgate	Low		Unclassified road with no receptors.
79	Grange Road	Low		Unclassified road with sporadic frontage development.
80	A15 - Humber Bridge	Low		A-road across the Humber Bridge, with parallel footway separated from the traffic.
81	West Street - West of Leven	Medium		Unclassified road with sporadic frontage development and a residential cluster near Leven. A footway is provided near the village.
82	Beverley Road (from A1035 to West Street)	High		Unclassified road with a concentration of residential and commercial frontage as well as a church and a public house in Leven village. A footway is provided through the village.
83	North Street (from West Street to Leven boundary)	High		Unclassified road with residential frontage development and access to a sports hall. A footway is provided.
84	New Road (from A165 to Leven boundary)	Medium		Unclassified road with sporadic residential and commercial frontage. In Brandesburton, frontage development is clustered. A footway is provided along the entire link.
85	Dunflat Road	Low		Unclassified road with no footway or frontage development. The link provides entrance to the Rowley Bridleway No. 7 (ROWLB07) and Rowley Footpath No. 8 (ROWLF08).
86	B1242 (between Cliff Road and the Onshore ECC)	High		B-road with a high number of sensitive receptors as the link passes through the centre of Skipsea village including a primary school and residential and commercial frontages.
87	Beeford Road (between the A165 to Bewholme Lane)	High		B-road with receptors at both ends of the link at Beeford village where there are residential frontage developments and Skipsea village where there are residential and commercial frontages. The link provides entrances to the Skipsea Footpaths No 1 and No 2 (SKIPF01, SKIPF02) respectively.
88	B1242 (btween the A165 to Skipsea	High		B-road which passes through villages with frontage developments, including residential and commercial properties. The link provides entrances to a number of PRoW including Ulrome Footpath No. 3, 4, 5 and 7 (ULROF03, ULROF04, ULROF05, ULROF07).
98	B1230 (Broadgate, East)	Medium		B-road with a concentration of residential frontage development. An offroad footway/cycleway is provide along the majority of the link. The cycle way forms part of NCR 164.
99	Heigholme Lane	Low		Unclassified road with sporadic residential development along the link.
100	Scorborough Lane	Low		Unclassified road with no receptors along the link.

26.6.1.4 Road Safety

169. To assess whether the Project would have an adverse effect upon road safety, it is necessary to establish a baseline and identify any inherent road safety issues within the Traffic and Transport Study Area.

170. It was agreed during the second meeting of ETG8 held on 30th September 2024 with the relevant highway authorities (see **Volume 2, Appendix 26.1 Consultation Responses for Traffic and Transport**) that the road safety review should examine the baseline collision data to identify those areas that are potentially sensitive to changes in traffic and that this review should include:

- Examining the rate of collisions per length of road in miles ('collision rates') and comparing this to a national average for comparable roads; and
- Reviewing the types of collisions at defined clusters of four or more collisions within three years (or three in a single year), ('collision clusters') to understand any patterns or trends, especially those involving HGV and vulnerable road users (namely cyclists, pedestrians and motorcyclists).

171. **Volume 2, Appendix 26.2 Transport Assessment** details an audit of the Traffic and Transport Study Area and provides a road safety baseline including collision rates and cluster locations.

172. A summary of the identified collision clusters by link and whether the link has a collision rate below or above the national average for comparable roads is presented in **Table 26-19.** Where the link has collision clusters and/or a collision rate above the national average the link will be subject to further assessment (detailed in **Section 26.7.1.5**).

Table 26-19 Road Safety Summary

Link ID.	Collision Clusters	Collision Rate	Further Assessment
1	No collision clusters present	Below national average	No
2	No collision clusters present	Below national average	No
3	No collision clusters present	Below national average	No
4	No collision clusters present	Above national average	Yes
5	No collision clusters present	Below national average	No
6	Collision cluster 1, at the White Cross roundabout, at the intersection of Links 6 and 37	Below national average	Yes
7	No collision clusters present	Below national average	No
8	No collision clusters present	Below national average	No
9	Collision cluster 2, at the junction between Grange Way and Ings Road	Below national average	Yes
	Collision cluster 3, at the intersection of Links 9, 10 and 63, located on the Driffield roundabout		
10	Collision cluster 3, at the intersection of Links 9, 10 and 63, located on the Driffield roundabout	Above national average	Yes
11	No collision clusters present	Above national average	Yes
12	Collision cluster 13, at the intersection of Links 11, 12, 60, 62 and 76, located at the Killingwoldgraves roundabout	Below national average	Yes
13	No collision clusters present	Below national average	Yes
14	No collision clusters present	Below national average	Yes
15	No collision clusters present	Below national average	Yes
16	No collision clusters present	Above national average	Yes
17	Collision cluster 15, located roundabout between Harland Way, the A164 and Main Street with Link 18	Below national average	Yes
18	Collision cluster 15, located on the roundabout between Harland Way, the A164 and Main Street at the intersection of Links 15 and 18	Below national average	Yes
	Collision cluster 16, at the junction between the A164, Eppleworth Road and Westfield Road		
	Collision cluster 17, at the roundabout junction of Links 18 and 19		
19	No collision clusters present	Below national average	No
20	Collision cluster 18, at the roundabout junction of Links 19 and 20	Above national average	Yes
	Collision cluster 19, at the roundabout junction of Links 20 and 21		

Link ID.	Collision Clusters	Collision Rate	Further Assessment
21	Collision cluster 19, at the junction of links 20 and 21	Above national average	Yes
	Collision cluster 62, at the roundabout junction of Links 21, 22 and 80		
22	No collision clusters present	Above national average	Yes
23	Collision cluster 28, at the junction between the A63 and a service station	Below national average	Yes
	Collision cluster 29, located on the A63		
24	Collision cluster 25, at the overlap of Links 24 and 80	Below national average	Yes
	Collision cluster 30, located on the A63		
25	Collision cluster 31, located on the A63	Below national average	Yes
26	Collision cluster 33, located on the A63	Below national average	Yes
	Collision cluster 34, located on the A63		
	Collision cluster 35, located on the A63 at the junction with Ferensway		
	Collision cluster 36, located on the A63		
	Collision cluster 37, at the junction between the A63, Market Place and Queen Street		
	Collision cluster 38, at the junction between the A63, the A1165 and Plimsoll Way		
27	Collision cluster 38, at the junction between the A63, the A1165 and Plimsoll Way	Below national average	Yes
	Collision cluster 42, at the Southcoates roundabout, located at the intersection of Links 27 and 74		
28	Collision cluster 44, at the Southcoates roundabout	Below national average	Yes
29	No collision clusters present	Below national average	No
30	Collision cluster 4, at the Marfleet roundabout, at the intersection of Links 30 and 51	Below national average	Yes
31	Collision cluster 39, at the junction of Links 31, 32 and 38	Above national average	Yes
	Collision cluster 40, at the junction between Mount Pleasant and Ellis Street		
	Collision cluster 41, at the roundabout junction of Links 31 and 74		
32	No collision clusters present	Above national average	Yes
33	Collision cluster 11, at the intersection of links 33 and 35	Above national average	Yes
	Collision cluster 58, at the roundabout connecting Holderness Road, Diadem Grove, Shannon Road and the B1237		
	Collision cluster 59, located on Holderness Road		
	Collision cluster 60, at the junction between Holderness Road and Bellfield Avenue		
	Collision cluster 61, at the junction between Holderness Road and Marfleet Lane		
34	No collision clusters present	Below national average	No
35	Collision cluster 11, at the intersection of Links 33 and 35	Above national average	Yes
36	No collision clusters present	Above national average	Yes
37	Collision cluster 1, at the White Cross roundabout, at the intersection of Links 6 and 37	Above national average	Yes
38	Collision cluster 39, at the junction of Links 31, 32 and 38	Above national average	Yes
	Collision cluster 53, located on Sutton Road/Holwell roundabout		
	Collision cluster 54, at the junction between the A1033 and Ann Watson Street		
	Collision cluster 55, at the junction between the A1165 and Ferry Lane		
	Collision cluster 56, at the roundabout connecting Mount Pleasant and the A1165		
	Collision cluster 57, at the roundabout connecting Mount Pleasant and James Reckitt Avenue		

Link ID.	Collision Clusters	Collision Rate	Further Assessment
39	Collision cluster 51, at the A1033/Sutton Road/Stockholm Road roundabout	Above national average	Yes
	Collision cluster 52, located on Sutton Road		
40	Collision cluster 49, at the Roebank roundabout	Below national average	Yes
	Collision cluster 50, at the A1033/Emmerdale roundabout		
	Collision cluster 51, at the A1033/Sutton Road/Stockholm Road roundabout		
41	Collision cluster 45, at the Dunswell roundabout	Above national average	Yes
	Collision cluster 46, at the Ennerdale Lift Bridge		
	Collision cluster 47, at the A1033/Gibraltar Road/Barnes Way roundabout		
	Collision cluster 48, at the Roebank roundabout		
42	Collision cluster 24, at the Dunswell roundabout	Below national average	Yes
43	Collision cluster 21, at the junction between Beverley Road and Dunswell Lane	Above national average	Yes
	Collision cluster 22, at the junction between Beverley Road and The Meadows		
	Collision cluster 23, at the Dunswell roundabout		
44	No collision clusters present	Below national average	No
45	No collision clusters present	Above national average	Yes
46	No collision clusters present	Below national average	No
47	No collision clusters present	Below national average	No
48	No collision clusters present	Below national average	No
49	Collision cluster 27, at the junction between Jackson Street and Daltry Street	Above national average	Yes
	Collision cluster 32, at the intersection of Links 25, 26 and 49		
50	Collision cluster 26, at the junction between English Street and St James Street	Above national average	Yes
51	Collision cluster 4, at the Marfleet roundabout at the intersection of Links 30 and 51	Above national average	Yes
	Collision cluster 5, at the junction between Marfleet Avenue, Marfleet Lane and Burma Drive		
	Collision cluster 6, at the junction between Preston Road and Marfleet Lane		
	Collision cluster 7, at the junction between Marfleet Lane, Sutton Way and Bessingby Grove		
	Collision cluster 8, at the junction between Marfleet Lane and Beverley Road		
	Collision cluster 9, at the junction between Marfleet Lane and Hopewell Road		
	Collision cluster 10, at the junction between Marfleet Lane and Hebrides Close		
52	No collision clusters present	Above national average	Yes
53	No collision clusters present	Below national average	No
54	Collision cluster 12, at the junction between the B1248 and Main Street	Above national average	Yes
55	No collision clusters present	Below national average	No
56	No collision clusters present	Below national average	No
57	Collision cluster 14, at the Killingwoldgraves roundabout at the intersection of Links 57, 60 and 61	Above national average	Yes
58	No collision clusters present	Above national average	Yes
59	No collision clusters present	Below national average	No
60	Collision cluster 14, at the Killingwoldgraves roundabout at the intersection of Links 57, 60 and 61	Above national average	Yes
61	Collision cluster 14, at the Killingwoldgraves roundabout at the intersection of Links 57, 60 and 61	Above national average	Yes

Link ID.	Collision Clusters	Collision Rate	Further Assessment
62	Collision cluster 13, at the intersection of Links 12, 60, 62 and 76, located at the Killingwoldgraves roundabout	Above national average	Yes
63	Collision cluster 3, at the intersection of Links 9, 10 and 63, located on the Driffield roundabout	Above national average	Yes
64	No collision clusters present	Below national average	No
65	No collision clusters present	Below national average	No
66	No collision clusters present	Above national average	Yes
67	No collision clusters present	Below national average	No
68	No collision clusters present	Below national average	No
69	No collision clusters present	Below national average	No
70	No collision clusters present	Below national average	No
71	No collision clusters present	Above national average	Yes
72	No collision clusters present	Above national average	Yes
73	No collision clusters present	Below national average	No
74	Collision cluster 41, at the roundabout junction of Links 31 and 74	Above national average	Yes
	Collision cluster 42, at the Southcoates roundabout, located at the intersection of Links 27 and 74		
75	No collision clusters present	Above national average	Yes
76	Collision cluster 13, at the intersection of Links 12, 60, 62 and 76, located at the Killingwoldgraves roundabout	Above national average	Yes
77	No collision clusters present	Below national average	No
78	No collision clusters present	Below national average	No
79	No collision clusters present	Above national average	Yes
80	Collision cluster 20, at the Wingfield Farm roundabout	Below national average	No
	Collision cluster 25, at the overlap of Links 24 and 80		

Link ID.	Collision Clusters	Collision Rate	Further Assessment
81	No collision clusters present	Below national average	No
82	No collision clusters present	Below national average	No
83	No collision clusters present	Above national average	Yes
84	No collision clusters present	Below national average	No
85	No collision clusters present	Below national average	No
86	No collision clusters present	Above national average	Yes
87	No collision clusters present	Above national average	Yes
88	No collision clusters present	Above national average	Yes
98	No collision clusters present	Below national average	No
99	No collision clusters present	Above national average	Yes
100	No collision clusters present	Below national average	No

26.6.2 Predicted Future Baseline

173. In the event that the Project is not developed, an assessment of future conditions for traffic and transport has been carried out and is described within this section.

26.6.2.1 Future Year Traffic Flows

174. The earliest date that the main onshore construction works would likely start would be 2029.

175. In order to consider a worst-case scenario, a reference year for background traffic of 2029 has been derived. The reasoning behind this is that background traffic flows in later years could be potentially higher and therefore result in a lesser magnitude of change for environmental impacts.

176. To take account of changes in travel patterns and sub-regional growth in housing and employment, a proportionate approach to forecasting future traffic growth for the 2029 reference year has been agreed during the second meeting of ETG8 held on 30th September 2024 with the relevant highway authorities (see **Volume 2, Appendix 26.1 Consultation Responses for Traffic and Transport**).

177. Forecast 2029 future year baseline traffic flows are presented in **Table 26-20.** The transport assessment (see **Volume 2, Appendix 26.2 Transport Assessment**) includes details of the approach to forecasting these flows using growth factors from the Department for Transport Trip End Model Presentation Programme software (known as TEMPro).

26.6.2.2 Climate Change and Natural Trends

178. Decarbonising Transport: A Better Greener Britain (Department for Transport, 2021) identifies that transport is the largest contributor to UK domestic greenhouse gas (GHG) emissions, and that emissions from transport have been broadly flat for the last 30 years.

179. The UK Government has enshrined in law the commitment to 'net zero' by 2050, and notably, has banned the sale of new full petrol and diesel cars and vans from 2035.

180. To meet the commitments to net zero, 'Decarbonising Transport' outlines broad approaches to how transport will be 'decarbonised'. These can be categorised as:

- Accelerating modal shift, e.g. increasing the number of journeys made by walking or cycling as opposed to road transport, and supporting the shift from road freight to rail or water, etc.; and
- Decarbonising emissions from all transport modes, e.g. through adoption of electric vehicles.

181. Given the rate of technological advancement in the decarbonisation of transport, and legal commitments to net zero, it is anticipated that GHG emissions will be reduced from current baseline levels. Further details on anticipated GHG emissions from the Project's road vehicles are provided in **Chapter 31 Climate Change.**

26.7 Assessment of Effects

182. The likely significant effects to traffic and transport receptors that may occur during construction, operation and decommissioning of the Project are assessed in the following sections. The assessment follows the methodology set out in **Section 26.5** and is based on the realistic worst-case scenarios defined in **Section 26.4.4**, with consideration of embedded mitigation measures identified in **Section 26.4.3**.

183. As noted in **Section 26.4.5**, the assessment of likely significant effects for the OCS zone infrastructure will remain the same for both development scenarios.

26.7.1 Potential Effects during Construction

26.7.1.1 Construction Traffic Impact Screening

184. With reference to EATM (Rule 1 and Rule 2), a screening process has been undertaken for the Traffic and Transport Study Area to identify routes that are likely to have significant changes in traffic flows and therefore require further impact assessment.

185. **Table 26-20** summarises the assigned daily peak vehicle trips generated by all materials, personnel and plant associated with the construction of the Project. The table also provides a comparison of the peak daily construction flows with the forecast background daily traffic flows in 2029 which identifies the links exceeding the EATM screening thresholds (highlighted in blue).

Table 26-20 Link Screening

Link ID	Link Description	Link Sensitivity		Background 2029 Annual Average Daily Traffic Flows		Forecast Peak Daily Construction Vehicle Trips		Percentage Increase	
				All Vehicles	HV	All Vehicles	HGV	All Vehicles	HV
1	A165 north of Allison Lane	Low		9,272	515	32	0	0.4%	0.0%
2	A165 between Allison Lane and Skipsea Road	Medium		9,272	515	158	126	1.7%	24.5%
3	A165 Between Skipsea Road and Grange Road	Low		9,384	830	1,047	363	11.2%	43.8%
4	A165 Between Grange Road and Brandesburton Roundabout	Low		9,754	543	1,378	363	14.1%	66.9%
5	A165 between A1035 and New Road	Negligible		11,857	973	1,377	363	11.6%	37.3%
6	A1035 between Leven Roundabout and White Cross Roundabout	Negligible		19,089	287	1,385	363	7.3%	126.6%
7	A1035 between White Cross Roundabout and Hall Farm	Low		21,732	757	1,450	411	6.7%	54.2%
8	A1035 between Hall Farm and Swinemoor Lane Roundabout	Medium		21,732	757	1,584	411	7.3%	54.2%
9	A1035 between Swinemoor Roundabout and Driffiled Roundabout	Low		15,290	793	1,242	411	8.1%	51.8%
10	A1035 between Driffiled Roundabout and Dog Kennel Lane Roundabout	Low		12,685	847	1,507	425	11.9%	50.2%
11	A1035 between Dog Kennel Lane Roundabout and Killingravesworld Roundabout	Low		12,734	951	1,633	425	12.8%	44.7%
12	A1035 between Killingravesworld Roundabout and Jocks Lodge Roundabout	Negligible		21,581	1,296	1,689	425	7.8%	32.8%
13	A164 Jocks Lodge between A1079 and A164 northern diverge point	Low		35,202	1,385	2,384	425	6.8%	30.7%
14	A164 Northbound only from southern diverge point	Low		17,953	706	1,230	213	6.8%	30.1%
15	A164 southbound only from northern diverge point	Low		17,249	678	1,230	213	7.1%	31.3%
16	A164 from Southern diverge point to Dunflat Road	Low		35,202	1,385	2,384	425	6.8%	30.7%
17	A164 between Dunflat Road and the B1233	Low		35,202	1,385	2,384	425	6.8%	30.7%
18	A164 between B1233 and Castle Road	Low		35,202	1,385	1,883	425	5.4%	30.7%
19	A164 between Castle Road and the B1232	Low		35,202	1,385	1,620	425	4.6%	30.7%
20	A164 between the B1232 and B1231	Negligible		20,159	1,319	1,382	425	6.9%	32.2%
21	A164 between the B1231 and Boothferry Road	Negligible		20,159	1,319	1,224	425	6.1%	32.2%

Link ID	Link Description	Link Sensitivity		Background 2029 Annual Average Daily Traffic Flows		Forecast Peak Daily Construction Vehicle Trips		Percentage Increase	
				All Vehicles	HV	All Vehicles	HGV	All Vehicles	HV
22	A15 - Boothferry Road	Low		32,821	2,941	705	425	2.1%	14.5%
23	A63 - Hull West	Negligible		50,094	6,724	705	425	1.4%	6.3%
24	A63 between Boothferry Road and the A1166	Negligible		68,203	6,744	425	425	0.6%	6.3%
25	A63 between the A1166 and Daltry Street	Low		61,436	5,816	425	425	0.7%	7.3%
26	A63 between Daltry Street and the A1165	Low		51,498	5,591	471	425	0.9%	7.6%
27	A63 between the A1165 and Southcoates Roundabout	Low		29,370	3,044	425	425	1.4%	14.0%
28	A1033 (between Southcoates Roundabout to Northern Gateway	Low		36,867	4,339	455	425	1.2%	9.8%
29	A1033 (between Northern Gateway and Marfleet Roundabout)	Low		36,867	4,339	455	425	1.2%	9.8%
30	A1033 (between Marfleet Roundabout and B1362)	Low		33,282	3,327	474	425	1.4%	12.8%
31	A1033 (between Mount Pleasant North Roundabout and A165 Holderness Road)	Low		18,796	1,310	500	425	2.7%	32.4%
32	A165 Holderness Road (between A1033 and Maybury Road)	High		13,054	814	66	0	0.5%	0.0%
33	A165 Holderness Road (between Maybury Road and Main Road)	High		19,322	1,107	486	411	2.5%	37.1%
34	A165 (between Main Road and Main Street)	Low		24,774	633	491	411	2.0%	64.8%
35	A165 (between Main Street and Skirlaugh)	High		24,774	633	486	411	2.0%	64.8%
36	A165 - Skirlaugh	High		89,89	576	490	411	5.4%	71.2%
37	A165 (between Skirlaugh and the A1035)	Low		89,89	576	505	411	5.6%	71.2%
38	A1033 (between Holderness Road and Sutton Road)	Low		23,812	2,007	559	425	2.3%	21.2%
39	A1033 (between Howell Road and Stockholme Road)	Low		18,431	767	540	425	2.9%	55.4%
40	A1033 (between Stockholm Road and Roebank Roundabout)	Low		18,431	767	540	425	2.9%	55.4%
41	A1033 (between Roebank Roundabout and Dunswell Roundabout)	Low		18,796	1,310	797	425	4.2%	32.4%
42	A1079 (between Dunswell Roundabout and Jocks Lodge Roundabout)	Negligible		20,800	1,152	1,110	425	5.3%	36.9%
43	A1174 (between Dunswell Roundabout and the A164)	High		14,528	529	330	0	2.3%	0.0%

Link ID	Link Description	Link Sensitivity		Background 2029 Annual Average Daily Traffic Flows		Forecast Peak Daily Construction Vehicle Trips		Percentage Increase	
				All Vehicles	HV	All Vehicles	HGV	All Vehicles	HV
44	A164 (between Ward Way and the A1174)	Low		12,409	551	90	0	0.7%	0.0%
45	A164 (between the A1174 and Jocks Lodge)	Low		12,409	551	952	298	7.7%	54.1%
46	Jocks Lodge (between Minster Way and the A1079)	Low		22,875	977	952	298	4.2%	30.6%
47	A1174 (between Dunswell Roundabout and the A164)	High		16,767	747	420	0	2.5%	0.0%
48	Neptune Street	Low		1,121	159	425	425	37.9%	266.9%
49	Jackson Street / Daltry Street	Low		12,421	292	425	425	3.4%	145.6%
50	English Street / Kingston Street / Commercial Road	Low		9,298	85	425	425	4.6%	500.4%
51	Maybury Road / Marfleet Lane	High		11,951	306	484	411	4.0%	134.0%
52	Coppleflat Lane between A164 to OCS	Low		2,957	84	1262	370	42.7%	438.9%
53	Bentley Lane between OCS and Broadgate	Low		2,957	84	370	370	12.5%	438.9%
54	B1248 (between the A1035 and Rootas Lane)	Low		12,495	583	357	115	2.9%	19.7%
55	B1248 (between Rootas Lane and Main Street)	Low		8,653	567	118	0	1.4%	0.0%
56	Rootas Lane (east)	Low		97	3	179	57	185.0%	1764.8%
57	Walkington Heads	Low		5,238	236	176	117	3.4%	49.6%
58	Leconfield Road / Miles Lane	Medium		3,493	113	135	57	3.9%	50.8%
59	West Street - Leven	High		205	6	91	56	44.3%	898.2%
60	Killingwoldgraves Lane	Low		8,947	358	176	117	2.0%	32.6%
61	Coppleflat Lane (between Walkington Heads and Broadgate)	Low		2,957	84	87	0	3.0%	0.0%
62	York Road	Low		5,913	184	98	0	1.6%	0.0%
63	A164 (between Driffiled Road Roundabout and Old Road)	Low		9,689	605	526	141	5.4%	23.2%
64	Old Road (between A164 and Miles Lane)	High		2,376	18	12	0	0.5%	0.0%
65	A164 (between Old Road and onshore EEC)	Low		8,970	465	539	141	6.0%	30.2%

Link ID	Link Description	Link Sensitivity		Background 2029 Annual Average Daily Traffic Flows		Forecast Peak Daily Construction Vehicle Trips		Percentage Increase	
				All Vehicles	HV	All Vehicles	HGV	All Vehicles	HV
66	A164 (between Onshore EEC and Station Road)	Low		8,970	465	201	85	2.2%	18.2%
67	Station Road	Low		214	20	180	85	84.3%	432.3%
68	Aike Lane	High		214	20	180	85	84.3%	432.3%
69	Manor Farm Cottages	Low		104	10	95	66	91.4%	639.5%
70	North Turnpike	Low		31	3	0	0	0.0%	0.0%
71	B1249 (Bridlington Balk)	High		1,647	67	277	185	16.8%	273.7%
72	North Froddingham Road	Medium		1,688	61	277	185	16.4%	305.2%
73	Dunnington Lane	Low		162	60	185	124	114.2%	207.6%
74	A1033 (between Mount Pleasant North Roundabout and Southcoates Roundabout)	Medium		10,731	1,002	242	213	2.3%	21.2%
75	A63 (Off ramp to Mount Pleasant North Roundabout)	Low		3,713	496	258	213	6.9%	42.8%
76	A1079 (between Killingravesworld Roundabout and west Bishop Burton)	High		11,998	912	401	57	3.3%	6.3%
77	A1079 (between Bishop Burton and Highgate)	Low		10,140	868	235	0	2.3%	0.0%
78	Highgate	Low		1,399	60	0	0	0.0%	0.0%
79	Grange Road	Low		785	53	580	237	73.9%	450.8%
80	A15 - Humber Bridge	Low		32,687	2,600	519	0	1.6%	0.0%
81	West Street - West of Leven	Medium		205	6	79	56	38.6%	898.2%
82	Beverley Road (from A1035 to West Street)	High		4,472	161	90	56	2.0%	34.8%
83	North Street (from West Street to Leven boundary)	High		2,302	120	56	56	2.4%	46.7%
84	New Road (from A165 to Leven boundary)	Medium		1,734	112	56	56	3.2%	49.8%
85	Dunflat Road	Low		228	24	149	78	65.2%	328.7%
86	B1242 (between Cliff Road and the onshore ECC)	High		4,025	156	210	126	5.2%	80.7%
87	Beeford Road (between the A165 to Bewholme Lane)	High		1,620	66	209	126	12.9%	189.8%

Link ID	Link Description	Link Sensitivity		Background 2029 Annual Average Daily Traffic Flows		Forecast Peak Daily Construction Vehicle Trips		Percentage Increase	
				All Vehicles	HV	All Vehicles	HGV	All Vehicles	HV
88	B1242 (btween the A165 to Skipsea	High		3,517	138	127	126	3.6%	91.6%
98	B1230 (Broadgate, East)	Medium		7,211	204	5	0	0.1%	0.0%
99	Heigholme Lane	Low		105	7	67	56	64.3%	857.3%
100	Scorborough Lane	Low		52	3	274	75	530.4%	2813.2%

186. In accordance with EATM, only those links that are showing greater than a 10% increase in total traffic flows for high sensitive links, or greater than a 30% increase in total traffic (or HGV component) for all other links, are considered when assessing the impacts of severance and amenity.

187. Disaggregating from **Table 26-20,** 55 of the 91 links are above the EATM screening thresholds for the Project.

26.7.1.2 Impact on Severance (TT-C-01)

188. Severance is the perceived division that can occur within a community when it becomes separated by a major traffic artery. **Section 26.5.3** provides details of the adopted impact assessment methodology.

189. The proposed embedded mitigation measures (see **Table 26-6**, Commitment IDs CO64, CO69, CO72, CO73, CO75 and CO76) provide the predicted construction traffic forecasts, distributions and working practises which set the baseline for the assessment of severance.

26.7.1.2.1 Receptor Sensitivity

190. The sensitivity of each highway link is detailed in **Table 26-18** and **Figure 26-4**.

26.7.1.2.2 Impact Magnitude

191. **Table 26-21** provides a summary of the magnitude of impact for each of the screened links and the spatial extent. The impact upon all links is predicted to be of medium-term duration, continuous and fully reversible. It is predicted that the impact will affect the receptors directly.

Table 26-21 Impact Magnitude of Severance

Links	Local / Regional / National	Rationale for Magnitude	Magnitude of Impact
53, 57, 58, 60, 71, 72, 82, 83, 84, 86, 87, 88,	Local	Change in total traffic flow is less than 30%	**Negligible**
3, 4, 7, 8, 9, 10, 11, 13, 14, 15, 16, 17, 18, 19, 31, 33, 34, 35, 36, 37, 39, 40, 45, 46, 49, 50, 51, 65, 75	Regional		
52, 59, 81	Local	Change in total traffic flow is between 30% and 60%	**Low**
48	Regional		
67, 68, 79, 85, 99	Local	Change in total traffic flow is between 60% and 90%	**Medium**
56, 69, 73, 100	Local	Change in total traffic flow is greater than 90%	**High**

26.7.1.2.3 Effect Significance

192. **Table 26-22** provides a summary of the summary of the sensitivity of each receptor, the magnitude of impact and overall significance of the severance effect.

Table 26-22 Significance of Severance Effect

Links	Magnitude	Sensitivity	Significance of Effect	Significant in EIA Terms
3, 4, 7, 8, 9, 10, 11, 13, 14, 15, 16, 17, 18, 19, 31, 34, 37, 39, 40, 45, 46, 49, 50, 53, 57, 60, 65, 75	**Negligible**	**Low**	**Negligible**	**Not significant**
58, 72, 84		**Medium**	**Minor**	**Not significant**
33, 35, 36, 51, 71, 82, 83, 86, 87, 88		**High**	**Minor**	**Not significant**
48, 52	**Low**	**Low**	**Minor**	**Not significant**
81		**Medium**	**Minor**	**Not significant**
59		**High**	**Moderate**	**Significant**
67, 79, 85, 99	**Medium**	**Low**	**Minor**	**Not significant**
68		**High**	**Major**	**Significant**
56, 69, 73, 100	**High**	**Low**	**Moderate**	**Significant**

193. **Table 26-22** identifies that Links 56, 59, 68, 69, 73 and 100 could potentially experience significant effects. Therefore, a more detailed assessment has been undertaken of the factors that may be influencing the magnitude of impact to determine whether additional mitigation measures are required.

194. To contextualise the potential effects, guidance provided in the DMRB Guidance for Population and Human Health (LA112) has been referenced. LA112 states that when considering severance for walkers, cyclists and horse-riders, roads with daily vehicle flows under 4,000 vehicles per day are considered to be of low sensitivity. The assessment adopts the LA112 threshold as a proxy for severance effects and considers any link that falls below the threshold to be subject to a low magnitude of impact.

195. **Table 26-20** summarises the forecast background daily traffic flows in 2029 in the Traffic and Transport Study Area and assigned daily peak vehicle trips associated with the construction of the Project.

196. Links 56, 68, 69, 73 and 100 could experience maximum total traffic flows (i.e. background plus the Project) of up to 394 vehicles per day which is significantly less than the LA112 threshold, and therefore the magnitude of impact is revised to low (from the magnitude of impact presented in **Table 26-22**).

197. Overall, for Links 56, 69, 73 and 100, it is predicted that sensitivity of the receptor is **low** and the revised magnitude of impact is **low**. The effect is therefore of **minor adverse** significance, which is **not significant** in EIA terms.

198. For Links 59 and 68, it is predicted that sensitivity of the receptors is **high** and the magnitude of impact is **low** and **medium** respectively. The effect is therefore of **moderate adverse** and **major adverse** significance, both of which is **significant** in EIA terms.

26.7.1.2.4 Additional Mitigation and Residual Effect

199. **Section 26.7.1.2.3** identified that the Project's peak daily construction traffic could result in potentially significant severance effects upon the users of Links 59 and 68.

200. Noting the temporary nature of the Project's construction phase, preferred measures to mitigate would focus upon managing the intensity of peak daily HGV movements (rather than intrusive highway interventions).

201. It is proposed that an acceptable level of LV and HGV trips via these links will be agreed with the relevant highways authorities and outlined in the Outline CTMP which will be provided with the DCO application submission. Measures to reduce peak daily HGV trips could include:

- Stockpiling of materials to reduce peak daily HGV demand;
- Backhauling, i.e. using laden vehicles to import stone and export excavated material;
- Use of local supply chain, to reduce the number of new HGV trips entering the Traffic and Transport Study Area;
- Optimising the size of HGV to reduce the total number;
- Re-alignment of critical construction activities to reduce the overlap of deliveries for peak construction:
- Working with the appointed Principal Contractor(s) to seek engineering refinements to reduce material quantities and therefore HGV numbers; and
- The reuse of materials onsite to reduce offsite HGV trips, e.g. using excavated materials to form bunds, etc.

202. Measures to reduce peak daily LV trips could include:

- The consolidation of employees at the nearest main temporary construction compounds and onward transfer of employees to site access via site vehicles; and
- Adjustment of the construction programme to ensure that peak construction activities do not overlap.

203. These additional mitigation measures are outlined in the draft version of the **Outline Construction Traffic Management Plan** (document reference 8.15) (see **Table 26-35**, Commitment ID CO73) and will be further refined at ES stage.

204. The Outline CTMP provided with the DCO application submission will apply appropriate measures to reduce HGV trips on sensitive links, and therefore, mitigate the significant adverse effects forecast within **Table 26-22.**

205. With the adoption of additional mitigation measures, the magnitude of impact would be **low**. The residual effect is therefore of **minor adverse** significance, which is **not significant** in EIA terms.

26.7.1.3 Impact on Amenity (TT-C-02)

206. Amenity is broadly defined as the relative pleasantness of a journey and is considered to be affected by traffic flow, traffic composition and pavement width and separation from traffic.

207. Amenity can affect a range of non-motorised users such as pedestrians, cyclists and equestrians. **Section 26.5.3.3.2** provides details on the adopted impact assessment methodology for amenity.

208. The proposed embedded mitigation measures (see **Table 26-6**, Commitment IDs CO64, CO69, CO72, CO73, CO75 and CO76) provide the predicted construction traffic forecasts, distributions and working practises which set the baseline for the assessment of amenity.

26.7.1.3.1 Receptor Sensitivity

209. The sensitivity of each highway link is detailed in **Table 26-18** and **Figure 26-4**.

26.7.1.3.2 Impact Magnitude

210. This section presents an assessment of the magnitude of amenity impact for each of the screened links (**Table 26-20**).

211. The amenity magnitude of impact assessment has been informed by the scale of forecast traffic increase in context with the function of the discreet highway link under consideration.

212. For the effects of amenity, the percentage daily increase can sometimes exaggerate the magnitude of impact, especially when the baseline HV flows are low. For these instances, construction peak hour vehicle trips have been calculated to further inform the consideration amenity impacts and to aid a more detailed assessment of construction traffic characteristics within the daily demand.

213. To develop a worst-case scenario, the peak demand hour flows include the assumption that employees (in LV) will arrive and depart within a single hour and that HGV movements would be one-twelfth of the daily demand (total daily HGV demand spread evenly across the available working hours).

214. The assessed magnitude of impact is derived from the evaluation of the baseline traffic flows, highway environment and the applied traffic demand. It therefore follows that the same applied demand may have a different assessed magnitude of impact when these parameters are taken into consideration.

215. The resultant amenity magnitude of impact assessment for the Project is presented in **Table 26-23**. The impact upon all links is predicted to be of medium-term duration, continuous and fully reversible. It is predicted that the impact will affect the receptors directly.

Table 26-23 Impact Magnitude of Amenity

Link Description (Designation)	Rationale for Magnitude of Impact	Assessed Magnitude of Impact
Link 3 - A165 Between Skipsea Road and Grange Road (Primary Route)	The link has a base flow of 9,384 vehicle trips (including 830 HV trips) per day and would be subject to construction traffic of up to 363 HGV trips per day at its peak. Peak daily construction traffic would result in an increase in traffic of 11.2% for all vehicles and 43.8% for HV.	**Low**
Link 4 - A165 Between Grange Road and Brandesburton Roundabout (Primary Route)	The link has a base flow of 9,754 vehicle trips (including 543 HV trips) per day and would be subject to construction traffic of up to 363 HGV trips per day at its peak. Peak daily construction traffic would result in an increase in traffic of 14.1% for all vehicles and 66.9% for HV.	**Low**
Link 7 - A1035 between White Cross Roundabout and Hall Farm (Primary Route)	The link has a base flow of 21,732 vehicle trips (including 757 HV trips) per day and would be subject to construction traffic of up to 411 HGV trips per day at its peak. Peak daily construction traffic would result in an increase in traffic of 6.7% for all vehicles and 54.2% for HV.	**Low**
Link 8 - A1035 between Hall Farm and Swinemoor Lane Roundabout (Primary Route)	The link has a base flow of 21,732 vehicle trips (including 757 HV trips) per day and would be subject to construction traffic of up to 411 HGV trips per day at its peak. Peak daily construction traffic would result in an increase in traffic of 7.3% for all vehicles and 54.2% for HV.	**Low**
Link 9 - A1035 between Swinemoor Roundabout and Driffield Roundabout (Primary Route)	The link has a base flow of 15,290 vehicle trips (including 793 HV trips) per day and would be subject to construction traffic of up to 411 HGV trips per day at its peak. Peak daily construction traffic would result in an increase in traffic of 8.1% for all vehicles and 51.8% for HV.	**Low**
Link 10 - A1035 between Driffiled Roundabout and Dog Kennel Lane Roundabout (Primary Route)	The link has a base flow of 12,685 vehicle trips (including 847 HV trips) per day and would be subject to construction traffic of up to 425 HGV trips per day at its peak. Peak daily construction traffic would result in an increase in traffic of 11.9% for all vehicles and 50.2% for HV.	**Low**
Link 11 - A1035 between Dog Kennel Lane Roundabout and Killingravesworld Roundabout (Primary Route)	The link has a base flow of 12,734 vehicle trips (including 951 HV trips) per day and would be subject to construction traffic of up to 425 HGV trips per day at its peak. Peak daily construction traffic would result in an increase in traffic of 12.8% for all vehicles and 44.7% for HV.	**Low**
Link 13 - A164 Jocks Lodge between A1079 and A164 northern diverge point. (Primary Route)	The link has a base flow of 35,202 vehicle trips (including 1,385 HV trips) per day and would be subject to construction traffic of up to 425 HGV trips per day at its peak. Peak daily construction traffic would result in an increase in traffic of 6.8% for all vehicles and 30.7% for HV.	**Low**
Link 14 - A164 Northbound only from southern diverge point (Primary Route)	The link has a base flow of 17,953 vehicle trips (including 706 HV trips) per day and would be subject to construction traffic of up to 213 HGV trips per day at its peak.	**Low**

Link Description (Designation)	Rationale for Magnitude of Impact	Assessed Magnitude of Impact
	Peak daily construction traffic would result in an increase in traffic of 6.8% for all vehicles and 30.1% for HV.	
Link 15 - A164 southbound only from northern diverge point (Primary Route)	The link has a base flow of 17,249 vehicle trips (including 678 HV trips) per day and would be subject to construction traffic of up to 213 HGV trips per day at its peak. Peak daily construction traffic would result in an increase in traffic of 7.1% for all vehicles and 31.3% for HV.	**Low**
Link 16 - A164 from Southern diverge point to Dunflat Road (Primary Route)	The link has a base flow of 35,202 vehicle trips (including 1,385 HV trips) per day and would be subject to construction traffic of up to 425 HGV trips per day at its peak. Peak daily construction traffic would result in an increase in traffic of 6.8% for all vehicles and 30.7% for HV.	**Low**
Link 17 - A164 between Dunflat Road and the B1233 (Primary Route)	The link has a base flow of 35,202 vehicle trips (including 1,385 HV trips) per day and would be subject to construction traffic of up to 425 HGV trips per day at its peak. Peak daily construction traffic would result in an increase in traffic of 6.8% for all vehicles and 30.7% for HV.	**Low**
Link 18 - A164 between B1233 and Castle Road (Primary Route)	The link has a base flow of 35,202 vehicle trips (including 1,385 HV trips) per day and would be subject to construction traffic of up to 425 HGV trips per day at its peak. Peak daily construction traffic would result in an increase in traffic of 5.4% for all vehicles and 30.7% for HV.	**Low**
Link 19 - A164 between Castle Road and the B1232 (Primary Route)	The link has a base flow of 35,202 vehicle trips (including 1,385 HV trips) per day and would be subject to construction traffic of up to 425 HGV trips per day at its peak. Peak daily construction traffic would result in an increase in traffic of 4.6% for all vehicles and 30.7% for HV.	**Low**
Link 31 - A1033 (between Mount Pleasant North Roundabout and A165 Holderness Road) (A-road)	The link has a base flow of 18,796 vehicle trips (including 1,310 HV trips) per day and would be subject to construction traffic of up to 425 HGV trips per day at its peak. Peak daily construction traffic would result in an increase in traffic of 2.7% for all vehicles and 32.4% for HV.	**Low**
Link 33 - A165 Holderness Road (between Maybury Road and Main Road) (Primary Route)	The link has a base flow of 19,322 vehicle trips (including 1,107 HV trips) per day and would be subject to construction traffic of up to 411 HGV trips per day at its peak. Peak daily construction traffic would result in an increase in traffic of 2.5% for all vehicles and 37.1% for HV.	**Low**
Link 34 - A165 (between Main Road and Main Street) (Primary Route) Link 35 - A165 (between Main Street and Skirlaugh) (Primary Route)	These links have base flows of 15,290 vehicle trips (including 793 HV trips) per day and would be subject to construction traffic of up to 411 HGV trips per day at its peak. Peak daily construction traffic would result in an increase in traffic of 2% for all vehicles and 64.8% for HV.	**Low**
Link 36 - A165 – Skirlaugh (Primary Route) Link 37 - A165 (between Skirlaugh and the A1035) (Primary Route)	These links have base flows of 8,989 vehicle trips (including 576 HV trips) per day and would be subject to construction traffic of up to 411 HGV trips per day at its peak. Peak daily construction traffic would result in an increase in traffic of up to 5.6% for all vehicles and 71.2% for HV.	**Low**
Link 39 - A1033 (between Howell Road and Stockholme Road) (Principal Route) Link 40 - A1033 (between Stockholm Road and Roebank Roundabout) (Principal Route)	These links have base flows of 18,431 vehicle trips (including 767 HV trips) per day and would be subject to construction traffic of up to 425 HGV trips per day at its peak. Peak daily construction traffic would result in an increase in traffic of up to 2.9% for all vehicles and 55.4% for HV.	**Low**
Link 41 - A1033 (between Roebank Roundabout and Dunswell Roundabout) (Principal Road)	The link has a base flow of 18,796 vehicle trips (including 1,310 HV trips) per day and would be subject to construction traffic of up to 425 HGV trips per day at its peak. Peak daily construction traffic would result in an increase in traffic of 2.7% for all vehicles and 32.4% for HV.	**Low**

Link Description (Designation)	Rationale for Magnitude of Impact	Assessed Magnitude of Impact
Link 45 - Jocks Lodge (between Minster Way and the A1079) (Principal Route)	The link has a base flow of 12,409 vehicle trips (including 551 HV trips) per day and would be subject to construction traffic of up to 298 HGV trips per day at its peak. Peak daily construction traffic would result in an increase in traffic of 7.7% for all vehicles and 54.4% for HV.	**Low**
Link 46 - Jocks Lodge (between Minster Way and the A1079) (Principal Route)	The link has a base flow of 22,875 vehicle trips (including 977 HV trips) per day and would be subject to construction traffic of up to 298 HGV trips per day at its peak. Peak daily construction traffic would result in an increase in traffic of 4.2% for all vehicles and 30.6% for HV.	**Low**
Link 48 - Neptune Street (Local Road)	The link has a base flow of 1,121 vehicle trips (including 159 HV trips) per day and would be subject to construction traffic of up to 425 HGV trips per day at its peak. Peak daily construction traffic would result in an increase in traffic of 37.9% for all vehicles and 266.9% for HV. Receptors along the link would experience a peak increase in flow of approximately 36 HV trips per hour	**High**
Link 49 - Jackson Street / Daltry Street (Local Road)	The link has a base flow of 12,421 vehicle trips (including 292 HV trips) per day and would be subject to construction traffic of up to 425 HGV trips per day at its peak. Peak daily construction traffic would result in an increase in traffic of 3.4% for all vehicles and 145.6% for HV. Receptors along the link would experience a peak increase in flow of approximately 36 HV trips per hour	**Medium**
Link 50 - English Street / Kingston Street / Commercial Road (Local Road)	The link has a base flow of 9,298 vehicle trips (including 85 HV trips) per day and would be subject to construction traffic of up to 425 HGV trips per day at its peak. Peak daily construction traffic would result in an increase in traffic of 4.6% for all vehicles and 500.4% for HV. Receptors along the link would experience a peak increase in flow of approximately 36 HV trips per hour	**Medium**
Link 51 - Maybury Road / Marfleet Lane (Primary Route)	The link has a base flow of 11,951 vehicle trips (including 306 HV trips) per day and would be subject to construction traffic of up to 411 HGV trips per day at its peak. Peak daily construction traffic would result in an increase in traffic of 4% for all vehicles and 134% for HV.	**Medium**
	Receptors along the link would experience a peak increase in flow of approximately 35 HV trips per hour	
Link 52 - Coppleflat Lane between A164 to OCS (Local Road)	The link has a base flow of 2,957 vehicle trips (including 84 HV trips) per day and would be subject to construction traffic of up to 370 HGV trips per day at its peak. Peak daily construction traffic would result in an increase in traffic of 42.7% for all vehicles and 438.9% for HV. Receptors along the link would experience a peak increase in flow of approximately 31 HV trips per hour	**High**
Link 53 - Bentley Lane between OCS and Broadgate (Local Road)	The link has a base flow of 2,957 vehicle trips (including 84 HV trips) per day and would be subject to construction traffic of up to 370 HGV trips per day at its peak. Peak daily construction traffic would result in an increase in traffic of 12.5% for all vehicles and 438.9% for HV. Receptors along the link would experience a peak increase in flow of approximately 31 HV trips per hour	**High**
Link 56 - Rootas Lane (east) (Local Road)	The link has a base flow of 97 vehicle trips (including three HV trips) per day and would be subject to construction traffic of up to 57 HGV trips per day at its peak. Peak daily construction traffic would result in an increase in traffic of 185% for all vehicles and 1764.8% for HV. Receptors along the link would experience a peak increase in flow of approximately five HV trips per hour	**High**
Link 57 - Walkington Heads (Local Road)	The link has a base flow of 5,238 vehicle trips (including 236 HV trips) per day and would be subject to construction traffic of up to 117 HGV trips per day at its peak. Peak daily construction traffic would result in an increase in traffic of 3.4% for all vehicles and 49.6% for HV.	**Low**
Link 58 - Leconfield Road / Miles Lane (Local Road)	The link has a base flow of 3,493 vehicle trips (including 113 HV trips) per day and would be subject to construction traffic of up to 57 HGV trips per day at its peak. Peak daily construction traffic would result in an increase in traffic of 3.9% for all vehicles and 50.8% for HV.	**Low**
Link 59 - West Street – Leven (Local Road)	The link has a base flow of 205 vehicle trips (including six HV trips) per day and would be subject to construction traffic of up to 56 HGV trips per day at its peak.	**High**

Link Description (Designation)	Rationale for Magnitude of Impact	Assessed Magnitude of Impact
	Peak daily construction traffic would result in an increase in traffic of 44.3% for all vehicles and 898.2% for HV. Receptors along the link would experience a peak increase in flow of approximately five HV trips per hour	
Link 60 - Killingwoldgraves Lane (Local Road)	The link has a base flow of 8,947 vehicle trips (including 358 HV trips) per day and would be subject to construction traffic of up to 117 HGV trips per day at its peak. Peak daily construction traffic would result in an increase in traffic of 2% for all vehicles and 32.6% for HV.	**Low**
Link 65 - A164 (between Old Road and Onshore EEC) (Principal Route)	The link has a base flow of 8,970 vehicle trips (including 465 HV trips) per day and would be subject to construction traffic of up to 141 HGV trips per day at its peak. Peak daily construction traffic would result in an increase in traffic of 6% for all vehicles and 30.2% for HV.	**Low**
Link 67 - Station Road (Local Road) Link 68 - Aike Lane (Local Road)	The link has a base flow of 214 vehicle trips (including 20 HV trips) per day and would be subject to construction traffic of up to 85 HGV trips per day at its peak. Peak daily construction traffic would result in an increase in traffic of 84.3% for all vehicles and 432.3% for HV. Receptors along the link would experience a peak increase in flow of approximately seven HV trips per hour	**High**
Link 69 - Manor Farm Cottages (Local Road)	The link has an estimated base flow of 100 vehicle trips (including 10 HV trips) per day and would be subject to construction traffic of up to 66 HGV trips per day at its peak. Peak daily construction traffic would result in an increase in traffic of 91.4% for all vehicles and 639.5% for HV. Receptors along the link would experience a peak increase in flow of approximately six HV trips per hour	**Medium**
Link 71 - B1249 (Bridlington Balk) (Local Road)	The link has a base flow of 1,647 vehicle trips (including 67 HV trips) per day and would be subject to construction traffic of up to 185 HGV trips per day at its peak. Peak daily construction traffic would result in an increase in traffic of 16.8% for all vehicles and 273.7% for HV. Receptors along the link would experience a peak increase in flow of approximately 16 HV trips per hour	**Medium**
Link 72 - North Froddingham Road (Local Road)	The link has a base flow of 1,688 vehicle trips (including 61 HV trips) per day and would be subject to construction traffic of up to 184 HGV trips per day at its peak. Peak daily construction traffic would result in an increase in traffic of 16.4% for all vehicles and 305.2% for HV. Receptors along the link would experience a peak increase in flow of approximately 16 HV trips per hour	**Medium**
Link 73 - Dunnington Lane (Local Road)	The link has a base flow of 162 vehicle trips (including 60 HV trips) per day and would be subject to construction traffic of up to 124 HGV trips per day at its peak. Peak daily construction traffic would result in an increase in traffic of 114.2% for all vehicles and 207.6% for HV. Receptors along the link would experience a peak increase in flow of approximately 11 HV trips per hour	**Medium**
Link 75 - A63 (Off ramp to Mount Pleasant North Roundabout) (Strategic Road Network)	The link has a base flow of 3,713 vehicle trips (including 496 HV trips) per day and would be subject to construction traffic of up to 213 HGV trips per day at its peak. Peak daily construction traffic would result in an increase in traffic of 6.9% for all vehicles and 42.8% for HV.	**Low**
Link 79 - Grange Road (Local Road)	The link has a base flow of 785 vehicle trips (including 53 HV trips) per day and would be subject to construction traffic of up to 237 HGV trips per day at its peak. Peak daily construction traffic would result in an increase in traffic of 73.9% for all vehicles and 450.8% for HV. Receptors along the link would experience a peak increase in flow of approximately 20 HV trips per hour	**High**
Link 81 - West Street - West of Leven (Local Road)	The link has a base flow of 205 vehicle trips (including 6 HV trips) per day and would be subject to construction traffic of up to 56 HGV trips per day at its peak. Peak daily construction traffic would result in an increase in traffic of 38.6% for all vehicles and 898.2% for HV. Receptors along the link would experience a peak increase in flow of approximately five HV trips per hour	**Medium**
Link 82 - Beverley Road (from A1035 to West Street) (Local Road)	The link has a base flow of 4,472 vehicle trips (including 161 HV trips) per day and would be subject to construction traffic of up to 56 HGV trips per day at its peak.	**Low**

Link Description (Designation)	Rationale for Magnitude of Impact	Assessed Magnitude of Impact
	Peak daily construction traffic would result in an increase in traffic of 2% for all vehicles and 34.8% for HV.	
Link 83 - North Street (from West Street to Leven boundary) (Local Road)	The link has a base flow of 2,302 vehicle trips (including 120 HV trips) per day and would be subject to construction traffic of up to 56 HGV trips per day at its peak. Peak daily construction traffic would result in an increase in traffic of 2.4% for all vehicles and 46.7% for HV.	**Low**
Link 84 - New Road (from A165 to Leven boundary) (Local Road)	The link has a base flow of 1,734 vehicle trips (including 112 HV trips) per day and would be subject to construction traffic of up to 56 HGV trips per day at its peak. Peak daily construction traffic would result in an increase in traffic of 3.2% for all vehicles and 49.8% for HV.	**Low**
Link 85 - Dunflat Road (Local Road)	The link has a base flow of 228 vehicle trips (including 24 HV trips) per day and would be subject to construction traffic of up to 78 HGV trips per day at its peak. Peak daily construction traffic would result in an increase in traffic of 65.2% for all vehicles and 328.7% for HV. Receptors along the link would experience a peak increase in flow of approximately seven HV trips per hour	**Medium**
Link 86 - B1242 (between Cliff Road and the onshore ECC) (Local Road)	The link has a base flow of 4,025 vehicle trips (including 156 HV trips) per day and would be subject to construction traffic of up to 126 HGV trips per day at its peak. Peak daily construction traffic would result in an increase in traffic of 5.2% for all vehicles and 80.7% for HV.	**Low**
Link 87 - Beeford Road (between the A165 to Bewholme Lane) (Local Road)	The link has a base flow of 1,620 vehicle trips (including 66 HV trips) per day and would be subject to construction traffic of up to 126 HGV trips per day at its peak. Peak daily construction traffic would result in an increase in traffic of 12.9% for all vehicles and 189.8% for HV. Receptors along the link would experience a peak increase in flow of approximately 11 HV trips per hour	**Medium**
Link 88 - B1242 (between the A165 to Skipsea (Local Road)	The link has a base flow of 3,517 vehicle trips (including 138 HV trips) per day ad would be subject to construction traffic of up to 126 HGV trips per day at its peak. Peak daily construction traffic would result in an increase in traffic of 3.6% for all vehicles and 91.6% for HV.	**Medium**
	Receptors along the link would experience a peak increase of approximately 11 HV trips per hour	
Link 99 - Heigholme Lane (Local Road)	The link has a base flow of 105 vehicle trips (including 7 HV trips) per day and would be subject to construction traffic of up to 56 HGV trips per day at its peak. Peak daily construction traffic would result in an increase in traffic of 64.3% for all vehicles and 857.3% for HV. Receptors along the link would experience a peak increase in flow of approximately five HV trips per hour	**High**
Link 100 - Scorborough Lane (Local Road)	The link has a base flow of 52 vehicle trips (including three HV trips) per day and would be subject to construction traffic of up to 75 HGV trips per day at its peak. Peak daily construction traffic would result in an increase in traffic of 530.4% for all vehicles and 2813.2% for HV. Receptors along the link would experience a peak increase in flow of approximately seven HV trips per hour	**High**

26.7.1.3.3 Effect Significance

216. **Table 26-24** provides a summary of each receptor, the magnitude of impact and an evaluation of the significance of amenity.

Table 26-24 Summary of Amenity Significance Effects

Links	Magnitude	Link Sensitivity	Significance of Effect	Significant in EIA Terms
3, 4, 7, 9, 10, 11, 13, 14, 15, 16, 17, 18, 19, 31, 34 37, 39, 40, 41, 45, 46, 57, 60, 65, 75	**Low**	**Low**	**Minor**	**Not significant**
8, 58, 84		**Medium**	**Minor**	**Not significant**
33, 35, 36, 82, 83, 86		**High**	**Moderate**	**Significant**
49, 50, 69, 85	**Medium**	**Low**	**Minor**	**Not significant**
72, 73, 81		**Medium**	**Moderate**	**Significant**
51, 71, 87, 88		**High**	**Major**	**Significant**
48, 52, 53, 56, 67, 79, 99, 100	**High**	**Low**	**Moderate**	**Significant**
59, 68		**High**	**Major**	**Significant**

26.7.1.3.4 Additional Mitigation and Residual Effect

217. **Table 26-24** identifies that the Project's peak daily construction traffic could result in potentially significant amenity effects upon the users of Links 33, 35, 36, 48, 51, 52, 53, 56, 59, 67, 68, 71, 72, 73, 79, 81, 82, 83, 86, 87, 88, 99 and 100 associated with the forecast increase in HGV traffic.

218. Noting the temporary nature of the Project's construction phase, preferred measures to mitigate would focus upon managing the intensity of peak daily HGV movements (rather than intrusive highway interventions).

219. It is proposed that an acceptable level of HGV trips via these links will be agreed with the relevant highways authorities and outlined in the Outline CTMP which will be provided with the DCO application submission. Measures to reduce peak daily HGV trips could include:

- Stockpiling of materials to reduce peak daily HGV demand;
- Backhauling, i.e. using laden vehicles to import stone and export excavated material;
- Use of local supply chain, to reduce the number of new HGV trips entering the Traffic and Transport Study Area;
- Optimising the size of HGV to reduce the total number;
- Re-alignment of critical construction activities to reduce the overlap of deliveries for peak construction activities;
- Working with the appointed Principal Contractor(s) to seek engineering refinements to reduce material quantities and therefore HGV numbers; and
- The reuse of materials onsite to reduce offsite HGV trips, e.g. using excavated materials to form bunds, etc.

220. These additional mitigation measures are outlined in the draft version of the **Outline Construction Traffic Management Plan** (document reference 8.15) (see **Table 26-35**, Commitment ID CO73) and will be further refined at ES stage.

221. The Outline CTMP will include appropriate measures to reduce HGV trips on sensitive links, and therefore, mitigate the significant adverse effects forecast within **Table 26-24.**

222. With the adoption of additional mitigation measures, the magnitude of impact would be **low**. The residual effect is therefore of **minor adverse** significance, which is **not significant** in EIA terms.

26.7.1.4 Impact on Fear and Intimidation (TT-C-03)

223. Pedestrians can experience fear and intimidation related in changes to traffic conditions. These changing conditions can include traffic volumes, speed and HGV composition. The levels of fear and intimidation experienced can also be influenced by to proximity of people to traffic.

224. The proposed embedded mitigation measures (see **Table 26-6**, Commitment IDs CO64, CO69, CO72, CO73, CO75 and CO76) provide the predicted construction traffic forecasts, distributions and working practises which set the baseline for the assessment of fear and intimidation.

26.7.1.4.1 Receptor Sensitivity

225. The sensitivity of each highway link is detailed in **Table 26-18** and **Figure 26-4**.

26.7.1.4.2 Impact Magnitude

226. This section presents an assessment of the magnitude of fear and intimidation impact for each of the screened links (**Table 26-20**).

227. The defined criteria for forming the magnitude of impact is outlined in **Section 26.5.3.3.3** which describes the 'Degree of Hazard' scoring system and resultant 'Levels of magnitude'.

228. The assessed magnitude of impact is derived from the evaluation of the forecast baseline traffic flow levels of fear and intimidation against the forecast baseline plus applied project traffic flows of each discreet highway links under consideration.

229. The resultant fear and intimidation magnitude of impact assessment for the Project is presented in **Table 26-25**. The impact upon all links is predicted to be of medium-term duration, continuous and fully reversible. It is predicted that the impact will affect the receptors directly.

Table 26-25 Impact Magnitude for Fear and Intimidation

Link	2029 Baseline			2029 Baseline Total Hazard Score (Level of Fear and Intimidation)	2029 Baseline + Project Flows			2029 Baseline + Project Flows Total Hazard Score (Level of Fear and Intimidation)	Step Change	Magnitude of Impact
	Estimated Average Vehicle Speed (mph)	Average Hourly Flows for Total Vehicles over 18 Hours	Total 18 Hour Daily HV Flows		Estimated Average Vehicle Speed (mph)	Average Hourly Flows for Total Vehicles over 18 Hours	Total 18 Hour Daily HV Flows			
3	>40	521	830	30 (Moderate)	>40	567	1,115	30 (Moderate)	0	**Negligible**
4	>40	542	543	30 (Moderate)	>40	602	829	30 (Moderate)	0	**Negligible**
7	>40	1,207	757	50 (Great)	>40	1,271	1,080	50 (Great)	0	**Negligible**
8	>40	1,207	757	50 (Great)	>40	1,276	1,080	50 (Great)	0	**Negligible**
9	>40	849	793	40 (Moderate)	>40	904	1,115	50 (Great)	1	**Low**
10	>40	705	847	40 (Great)	>40	771	1,181	40 (Great)	0	**Negligible**
11	>40	707	951	40 (Great)	>40	779	1,285	40 (Great)	0	**Negligible**
13	>40	1,956	1385	70 (Great)	>40	2,060	1,718	70 (Great)	0	**Negligible**
14	>40	997	706	40 (Moderate)	>40	1,051	873	40 (Moderate)	0	**Negligible**
15	>40	958	678	40 (Moderate)	>40	1,012	845	40 (Moderate)	0	**Negligible**
16	>40	1,956	1385	70 (Great)	>40	2,060	1,718	70 (Great)	0	**Negligible**
17	>40	1,956	1385	70 (Great)	>40	2,060	1,718	70 (Great)	0	**Negligible**
18	>40	1,956	1385	70 (Great)	>40	2,038	1,718	70 (Great)	0	**Negligible**
19	>40	1,956	1385	70 (Great)	>40	2,026	1,718	70 (Great)	0	**Negligible**
31	30-40	1,044	1310	40 (Moderate)	30-40	1,066	1,644	40 (Moderate)	0	**Negligible**
33	20-30	1,073	1107	30 (Moderate)	20-30	1,095	1,430	30 (Moderate)	0	**Negligible**
34	>40	1,376	633	50 (Great)	>40	1,398	956	50 (Great)	0	**Negligible**
35	>40	1,376	633	50 (Great)	>40	1,398	956	50 (Great)	0	**Negligible**
36	20-30	499	576	10 (Small)	20-30	521	899	10 (Small)	0	**Negligible**
37	>40	499	576	30 (Moderate)	>40	521	899	30 (Moderate)	0	**Negligible**

Link	2029 Baseline			2029 Baseline Total Hazard Score (Level of Fear and Intimidation)	2029 Baseline + Project Flows			2029 Baseline + Project Flows Total Hazard Score (Level of Fear and Intimidation)	Step Change	Magnitude of Impact
	Estimated Average Vehicle Speed (mph)	Average Hourly Flows for Total Vehicles over 18 Hours	Total 18 Hour Daily HV Flows		Estimated Average Vehicle Speed (mph)	Average Hourly Flows for Total Vehicles over 18 Hours	Total 18 Hour Daily HV Flows			
39	30-40	1,024	767	30 (Moderate)	30-40	1,047	1,101	30 (Moderate)	0	**Negligible**
40	30-40	1,024	767	30 (Moderate)	30-40	1,047	1,101	30 (Moderate)	0	**Negligible**
41	30-40	1,044	1310	40 (Moderate)	30-40	1,079	1,644	40 (Moderate)	0	**Negligible**
45	>40	689	551	40 (Moderate)	>40	731	786	40 (Moderate)	0	**Negligible**
46	>40	1,271	977	60 (Great)	>40	1,312	1,211	60 (Great)	0	**Negligible**
48	20-30	62	159	10 (Small)	20-30	81	493	10 (Small)	0	**Negligible**
49	20-30	690	292	20 (Small)	20-30	709	626	20 (Small)	0	**Negligible**
50	20-30	517	85	10 (Small)	20-30	535	419	10 (Small)	0	**Negligible**
51	20-30	664	306	20 (Small)	20-30	685	629	20 (Small)	0	**Negligible**
52	>40	164	84	30 (Moderate)	>40	219	375	30 (Moderate)	0	**Negligible**
53	>40	164	84	30 (Moderate)	>40	180	375	30 (Moderate)	0	**Negligible**
56	20-30	5	3	10 (Small)	20-30	13	48	10 (Small)	0	**Negligible**
57	>40	291	236	30 (Moderate)	>40	299	327	30 (Moderate)	0	**Negligible**
58	30-40	194	113	20 (Small)	30-40	200	158	20 (Small)	0	**Negligible**
59	20-30	11	6	10 (Small)	20-30	15	50	10 (Small)	0	**Negligible**
60	>40	497	358	30 (Moderate)	>40	505	450	30 (Moderate)	0	**Negligible**
65	>40	498	465	30 (Moderate)	>40	522	576	30 (Moderate)	0	**Negligible**
67	30-40	12	20	20 (Small)	30-40	20	86	20 (Small)	0	**Negligible**
68	30-40	12	20	20 (Small)	30-40	20	86	20 (Small)	0	**Negligible**
69	10-20	6	10	10 (Small)	10-20	10	63	10 (Small)	0	**Negligible**
71	>40	91	67	30 (Moderate)	>40	104	213	30 (Moderate)	0	**Negligible**

Link	2029 Baseline			2029 Baseline Total Hazard Score (Level of Fear and Intimidation)	2029 Baseline + Project Flows			2029 Baseline + Project Flows Total Hazard Score (Level of Fear and Intimidation)	Step Change	Magnitude of Impact
	Estimated Average Vehicle Speed (mph)	Average Hourly Flows for Total Vehicles over 18 Hours	Total 18 Hour Daily HV Flows		Estimated Average Vehicle Speed (mph)	Average Hourly Flows for Total Vehicles over 18 Hours	Total 18 Hour Daily HV Flows			
72	>40	94	61	30 (Moderate)	>40	106	206	30 (Moderate)	0	**Negligible**
73	30-40	9	60	20 (Small)	30-40	17	158	20 (Small)	0	**Negligible**
75	30-40	206	496	20 (Small)	30-40	218	663	20 (Small)	0	**Negligible**
79	30-40	44	53	20 (Small)	30-40	69	239	20 (Small)	0	**Negligible**
81	20-30	11	6	0 (Small)	20-30	15	50	0 (Small)	0	**Negligible**
82	30-40	248	161	20 (Small)	30-40	252	205	20 (Small)	0	**Negligible**
83	>40	128	120	30 (Moderate)	>40	130	164	30 (Moderate)	0	**Negligible**
84	30-40	96	112	20 (Small)	30-40	99	156	20 (Small)	0	**Negligible**
85	30-40	13	24	20 (Small)	30-40	19	85	20 (Small)	0	**Negligible**
86	>40	224	156	30 (Moderate)	>40	233	255	30 (Moderate)	0	**Negligible**
87	>40	90	66	30 (Moderate)	>40	99	165	30 (Moderate)	0	**Negligible**
88	30-40	195	138	20 (Small)	30-40	201	237	20 (Small)	0	**Negligible**
99	30-40	6	7	20 (Small)	30-40	9	50	20 (Small)	0	**Negligible**
100	30-40	3	3	20 (Small)	30-40	15	62	20 (Small)	0	**Negligible**

230. **Table 26-25** details that all links, except for Link 9, show no step changes in the level of fear and intimidation and therefore there is a **negligible** magnitude of impact on these links. Link 9 is predicted to experience one step change in level with a magnitude of impact of **low**.

26.7.1.4.3 Effect Significance

231. **Table 26-26** provides a summary of each receptor, the magnitude of impact and an evaluation of the significance of fear and intimidation.

Table 26-26 Summary of Fear and Intimidation Significance Effects

Links	Magnitude	Link Sensitivity	Significance of Effect	Significant in EIA Terms
3, 4, 7, 10, 11, 13, 14, 15, 16, 17, 18, 19, 31, 34, 37, 39, 40, 41, 45, 46, 48, 49, 50, 52, 53, 56, 57, 60, 65, 67, 69, 73, 75, 79, 85, 99, 100	**Negligible**	**Low**	**Negligible**	**Not significant**
8, 58, 72, 81, 84		**Medium**	**Minor**	**Not significant**
33, 35, 36, 51, 59, 68, 71, 82, 83, 86, 87, 88		**High**	**Minor**	**Not significant**
9	**Low**	**Low**	**Minor**	**Not significant**

232. Overall, it is predicted that sensitivity of the receptor is **low** and the magnitude of impact is **minor.** The effect is therefore of **minor adverse** significance, which is not **significant** in EIA terms.

26.7.1.5 Impact on Road Safety (Including Hazardous Loads) (TT-C-04)

233. In order to understand the potential effect of changes in traffic (associated with the Project) on the existing road safety baseline, an examination of the recorded collisions occurring within the Traffic and Transport Study Area has been undertaken in context of the development proposals.

234. The proposed embedded mitigation measures (see **Table 26-6**, Commitment IDs CO64, CO69, CO72, CO73, CO74, CO75 and CO76) provide the predicted construction traffic forecasts, distributions and working practises which set the baseline for the assessment of road safety (including hazardous loads).

26.7.1.5.1 Receptor Sensitivity and Impact Magnitude

235. The initial review of the existing road safety baseline has selected areas where there are concentrations of collisions (known as collision clusters) and links with collision rates higher than the national average which may be sensitive to changes in traffic flows. **Section 26.5.3.3.4** provides full details on the methodology for identifying these collision clusters and links where collision rates are higher than the national average.

236. A detailed review has been undertaken of the selected links to identify collision patterns, causation factors and types of road users involved to determine the sensitivity to the changes in traffic induced by the Project's construction demand. This detailed review is contained within **Volume 2, Appendix 26.2 Transport Assessment** and the findings are summarised in **Table 26-27**. Where the selected link review reveals a pattern of collisions that show a disproportionate involvement of larger / slower moving vehicles or the pattern of collisions could be disproportionately impacted by larger vehicles, further consideration is given to the HV composition of the Project's construction traffic demand (including hazardous load composition) when assessing the magnitude of impact. In other cases, the total construction traffic demand (LV + HGV) is the key determinate when assessing the magnitude of impact for a selected link.

237. **Table 26-27** provides a review of the sensitivity of the selected links, and the magnitude of impact of the Project's traffic in the context of the changes in forecast daily traffic flows in 2029. **Table 26-27** also identifies links which are proposed to be used by hazardous loads (hazardous load routes).

238. Where a hazardous load route has been identified, the collisions are investigated to determine if any collision involved HV. If no collisions have occurred, it is considered that the link does not pose a significant risk to hazardous loads. Where a pattern of HV have been involved in the collisions, the percentage increase in additional project HGV is presented and a judgement upon the level of impact magnitude is undertaken. Where a significant effect is identified, mitigation measures are further proposed.

239. Details of the percentage changes in daily traffic flows have been summarised from **Table 26-20** to facilitate a proportionate assessment of magnitude of impact. The impact upon all links is predicted to be of medium-term duration, continuous and fully reversible. It is predicted that the impact will affect the receptors directly.

Table 26-27 Magnitude of Road Safety Impacts and Sensitive Receptors

Link ID	Link Name	Hazardous Load Route	Description and Sensitivity	Impact Magnitude
4	A165 between Grange Road and Brandesburton roundabout	No	Link 4 consists of the A165 between Grange Road and Brandesburton roundabout. it is a rural A-road and is 2.2 miles in length. During the five-year study period, 10 collisions have been recorded, seven of which were slight and three that were serious, no fatalities were recorded. Overall, Link 4 shows five loss of control type collisions, two collisions caused by poor lane discipline at the roundabout, two failures to give way, and a rear-end shunt collision. It is assessed that there is an emerging pattern of loss of control collisions, especially at the Leven roundabout. Noting the relatively low overall numbers of collisions, the link is assessed as of medium sensitivity.	Link 4 is forecast to experience an increase in total traffic of 14.1%. It is assessed that a change in total traffic of up to 14.1% represents a **low** magnitude of impact.
6	A1035 between Leven roundabout and White Cross roundabout	No	Link 6 consists of the A165 between the Leven roundabout and the White Cross roundabout. It is a rural A-road and is four miles in length and has a collision rate below the national average. There is a collision cluster (Cluster 1) located at the White Cross roundabout at the intersection of links 6, 7, 37, and 82. In summary, at Cluster 1, there were three collisions caused by a loss of control, three collisions caused by a lack of lane discipline, three rear-end shunts and two collisions caused by a failure to give way. It is assessed that there is no significant emerging pattern of collisions along Link 6. The link is therefore assessed as of low sensitivity.	Links 6, 7, 37, and 82 are forecast to experience an increase in total traffic of up to 7.3%. It is assessed that a change in total traffic of up to 7.3% represents a **negligible** magnitude of impact.
9	A1035 between Swinemoor Roundabout and Driffield Roundabout	No	Link 9 consists of the A1035 north of Beverley which is a rural A-road and is 1.5 miles long and has a collision rate that is below the national average. There are two clusters of collisions recorded on the link: Cluster 2 and 3. Cluster 2 is located near the junction with Ings Road and the A1035 consisting of one serious and two slight collisions. Cluster 3 is located on Link 9 on the Driffield roundabout, intersecting with links 10 and 63 consisting of two serious and three slight collisions. There were no fatal collisions recorded at either cluster. In summary, there were three failures to give way, two rear-end shunts, one unspecified collision and one collision caused by goods falling off the roof of a vehicle. It is assessed that there is no significant emerging pattern of collisions along Link 9. The link is therefore assessed as of low sensitivity.	Links 9, 10 and 63 are forecast to experience an increase in total traffic of up to 11.9%. It is assessed that a change in total traffic of up to 11.9% represents a **low** magnitude of impact.
10	A1035 between Driffield Roundabout and Dog Kennel Lane Roundabout	No	This link consists of the A1035 between the Driffield Road roundabout and the Dog Kennel Lane roundabout. This link is 1.4 miles long and a rural A-road and has a collision rate higher than the national average and includes collision Cluster 3. During the five-year study period, there have been seven collisions five of which were slight and two that were serious, no fatalities were recorded. One collision involved a HV. Cluster 3 is also located on Link 10 and is reported in Link 9. The collisions outside of Cluster 3 consist of three rear-end shunts, two collisions with cyclists and one instance where poor lane discipline resulted in a collision. It is assessed that there is no significant emerging pattern of collisions along Link 10. The link is therefore assessed as of low sensitivity.	Link 10 is forecast to experience an increase in total traffic of up to 11.9%. It is assessed that a change in total traffic of up to 11.9% represents a **low** magnitude of impact.
11	A1035 between Dog Kennel Lane Roundabout and Killingravesworld Roundabout	No	Link 11 is a rural A-road, between Dog Kennel Lane roundabout and Killingwoldgraves roundabout. The link is 1.2 miles long and has a collision rate above the national average. Eight collisions were recorded along the link of which two were serious and six were slight, no fatalities were recorded. In summary, there were five losses of control and three rear-end shunts on Link 11. It is assessed that as these collisions are distributed along the link, there is no persistent emerging pattern of collisions along Link 11. The link is therefore assessed as of low sensitivity.	Link 11 is forecast to experience an increase in total traffic of up to 12.8%. It is assessed that a change in total traffic of up to 12.8% represents a **low** magnitude of impact.

Link ID	Link Name	Hazardous Load Route	Description and Sensitivity	Impact Magnitude
12	A1035 between Killingravesworld Roundabout and Jocks Lodge Roundabout	No	Link 12 is a rural A-road, between Killingwoldgraves roundabout and the Jock's Lodge roundabout. The link is 2.4 miles long and has a collision rate below the national average. During the five-year study period, a total of ten collisions were recorded along the link, two of which were serious and eight of which were slight, no fatalities were recorded. One collision involved a HV. Cluster 13 is located at the Killingwoldgraves roundabout (at the intersection of Links 11, 12, 60, 62 and 76). Seven of the ten collisions on Link 12 occurred at Cluster 13. In summary, there were two losses of control, two rear-end shunts, two unspecified collisions, one collision due to a failure to give way and one collision with a cyclist. It is assessed that there is no emerging pattern of collisions. The link therefore is assessed as of low sensitivity.	Links 11, 12, 60, 62 and 76 are forecast to experience an increase in total traffic of 12.8%. It is assessed that a change in total traffic of up to 12.8% represents a **low** magnitude of impact.
16	A164 from Southern diverge point to Dunflat Road	Yes	Link 16 is a section of the A164 south of the Jock's Lodge roundabout. The link is 0.3 miles in length and is a rural A-road with a collision rate above the national average. The road has five recorded collisions, four of which were slight and one which was serious, no fatalities were recorded. The nature of the collisions is described below: • A vehicle failed to slow in response to the vehicles in front, causing a four vehicle rear-end shunt collision; • A motorcycle rider lost control on loose gravel and fell off their bike; • A vehicle fails to slow in time, colliding with the car in front; • One further instance of two vehicles colliding in a rear-end shunt collision due to a failure to break in time; and • A vehicle failed to slow in time in response to the vehicles in front so takes evasive action and collides with a tree. It is assessed that the nature of the collisions highlights a pattern of vehicles failing to slow in response to the movement of traffic, commonly resulting in rear-end shunt collisions on Link 16. Noting the relatively low number of collisions on the link and lack of HV involvement the link is assessed as of medium sensitivity. In regard to the hazardous load route no collisions involved a HV.	Link 16 is forecast to experience an increase in total traffic of up to 6.8%. It is assessed that a change in total traffic of up to 6.8% represents a **negligible** magnitude of impact.
17	A164 between Dunflat Road and the B1233	Yes	Link 17 is part of the A164, a rural A-road of 1 mile in length and has a collision rate below the national average. A total of nine collisions, seven slight, one serious and one fatal were recorded along Link 17. Six of the nine collisions occurred at Cluster 15, located at the roundabout between Harland Way, the A164 and Main Street (the intersection of Links 17 and 18). The collisions within Cluster 15 consist of two losses of control, three failures to give way to a cyclist and a rear-end shunt involving a cyclist. It is assessed that there is an emerging pattern of collisions between vehicles and cyclists at the roundabout on Link 17. The link is assessed as of high sensitivity. In regard to the hazardous load route no collisions were identified as involving a HV.	Links 17 and 18 are forecast to experience an increase in total traffic of 6.8% and HGV traffic of 30.7% It is assessed that a change in HGV traffic of up to 30.7% represents a **low** magnitude of impact.
18	A164 between B1233 and Castle Road	Yes	Link 18 consists of the A164, a rural A-road from Cottingham to Skidby and has a collision rate below the national average. Three clusters are however located on Link 18 (Clusters 15, 16 and 17). Cluster 15 is located at the roundabout between Harland Way, the A164 and Main Street (the intersection of Links 17 and 18). These collisions are reported at Link 17. Cluster 16 is located where the A164 crosses over Westfield / Eppleworth Road and included three slight collisions. Cluster 17 is located on the roundabout connecting the A164 and Castle Road (the intersection of Links 18 and 19) and included three slight collisions.	Links 17 and 18 are forecast to experience an increase in total traffic of up to 6.8%. It is assessed that a change in total traffic of up to 6.8% represents a **negligible** magnitude of impact.

Link ID	Link Name	Hazardous Load Route	Description and Sensitivity	Impact Magnitude
			In summary, at Clusters 16 and 17 there were two collisions caused by a loss of control, two rear-end shunts, one unspecified collision and two collisions caused by poor observation. It is assessed that there is no significant emerging pattern of the collisions on Link 18. Therefore, the link is assessed as of low sensitivity. In regard to the hazardous load route no collisions were identified as involving a HV.	
20	A164 between the B1232 and B1231	Yes	Link 20 is located on the A164, north-west of Willerby, and the rate of collisions is above the national average. The road is 2.4 miles long and is a rural A-road. During the five-year study period a total of 19 collisions have occurred on Link 20 including two collision clusters (Clusters 18 and 19). Five of the 19 collisions occurred at Cluster 18 and comprised of one serious and four slight collisions. A further five collisions (one serious and four slight) occurred at Cluster 19, located at the junction between the B1231 and the A164 (at the intersection of Links 20 and 21) The remaining nine collisions along Link 20 comprised of two serious and seven slight collisions. In summary, there were ten rear-end shunt type collisions, five losses of control, two dangerous U-turns, one failure to give way, a collision with a pedestrian and an unspecified collision. It is assessed that there is an emerging pattern of rear-end shunt and loss of control type collisions on Link 20. Therefore, the link is assessed as of high sensitivity. In regard to the hazardous load route no collisions were identified as involving a HV.	Links 20 and 21 are forecast to experience an increase in total traffic of up to 6.9%. It is assessed that a change in total traffic of up to 6.9% represents a **negligible** magnitude of impact.
21	A164 between the B1231 and Boothferry Road	Yes	Link 21 is a section of the A164 located between an unnamed roundabout at the intersection of the A164 and the B1231, and the Wingfield Farm roundabout. The road is a rural A-road and is a mile long and the collision rate is above the national average. During the five-year study period a total of 13 collisions have occurred on Link 21. Two collisions were serious and 11 were slight, no fatalities were recorded. In addition, two collision clusters (Cluster 19 and 62) have also occurred in the vicinity of Link 21. Collision Cluster 19 is located at the junction between the B1231 and the A164 (Links 20 and 21). The collisions at this cluster are considered within Link 20. Cluster 62 is located on the eastern arm of the roundabout at the intersection of Links 21, 22 and 80. A total of 16 collisions occurred at this arm and include two serious and 14 slight collisions. One of these collisions included a HV. In summary, there were 17 rear end shunt type collisions, four losses of control, poor observation when performing a U-turn and a collision caused by poor observation when performing a manoeuvre. It is assessed that there is an emerging pattern of rear-end shunt type collisions on approach to the Wingfield Farm roundabout. Taking the above summary into account, the link is assessed as of high sensitivity. In regard to the hazardous load route one collision involving a HV.	Links 20, 21 and 80 are forecast to experience an increase in total traffic of up to 6.9%. It is assessed that a change in total traffic of up to 6.9% represents a **negligible** magnitude of impact.
22	A15 - Boothferry Road	Yes	Link 22 is located on the A15 Boothferry Road. This is a rural A-road and is 0.5 miles long and has a collision rate above the national average. A total of nine collisions were recorded during the study period, of which, one was a serious collision and eight were slight, no fatalities were recorded. In summary, there were six instances of rear-end shunt type collisions, one example of a loss of control and poor lane discipline causing a collision, and a collision caused by a driver taking evasive action to avoid a collision with the vehicle in front. It is assessed that there is a slight emerging pattern of rear end shunt type collisions along Link 22. Taking the above summary into account, the link is assessed as of medium sensitivity. In regard to the hazardous load route no collisions were identified as involving a HV.	Link 22 is forecast to experience an increase in total traffic of up to 2.1%. It is assessed that a change in total traffic of up to 2.1% represents a **negligible** magnitude of impact.

Link ID	Link Name	Hazardous Load Route	Description and Sensitivity	Impact Magnitude
23	A63 - Hull West	Yes	Link 23 is located on the A63 north of North Ferriby. This link is 2.1 miles long, is a rural A-road and has a collision rate below the national average. Clusters 28 and 29 are also located on this link. Cluster 28 is located at the services located west of the A15 junction and consists of three rear-end shunts resulting in slight collisions. Cluster 29 is located on the approach to two slip roads for the A15 with a total of seven collisions (two serious and five slight). In summary, there were five rear-end shunts, two collisions involving multiple vehicles colliding in reaction to a vehicle in front, one collision due to an intoxicated driver, one loss of control collision and a collision with a pedestrian. It is assessed that there is a slight emerging pattern of rear-end shunt collisions on Link 23. Taking the above summary into account, the link is assessed as of medium sensitivity. In regard to the hazardous load route no collisions were identified as involving a HV.	Link 23 is forecast to experience an increase in total traffic of up to 1.4%. It is assessed that a change in total traffic of up to 1.4% represents a **negligible** magnitude of impact.
24	A63 between Boothferry Road and the A1166	Yes	Link 24 consists of the A63 between the St Andrew's Quay roundabout and the A15 junction. Link 24 is a A-road and is 4 miles long and has a collision rate below the national average. Cluster 25 is located on Link 24 where the road crosses under the Humber Bridge (A15). Five collisions were recorded (six slight and one fatal). Cluster 30 is located on the A63 near the Priory Way exit of the A63, nine slight collisions were recorded. Two of the nine collisions involved HVs. In summary, there were four rear-end shunt collisions, two collisions caused by a driver's poor observation when changing lanes, three collisions due to a loss of control, two collisions due to poor lane discipline and an unspecified collision. It is assessed that there is a slight emerging pattern of rear end shunt type collision along Link 24. Taking the above summary into account, the link is assessed as of high sensitivity. In regard to the hazardous load route two collisions involved HV within Cluster 30.	Link 24 is forecast to experience an increase in total traffic of 0.6% and HGV traffic of 6.3% It is assessed that a change in HGV traffic of up to 6.3% represents a **negligible** magnitude of impact.
25	A63 between the A1166 and Daltry Street	Yes	Link 25 is an urban A-road one mile long. It is located from Saint Andrews Quay to the Hessle Road / Rawling Way / A63 / Daltry Street / Madeley Street roundabout. Link 25 has a collision rate below the national average. Cluster 31 is located on Link 25 on the A63 near St Andrew's Dock. This consists of three collisions, one fatal and two slight. In summary, there was a loss of control, a rear-end shunt and an unspecified collision. This suggests that there is no emerging pattern of collisions on Link 25. Taking the above summary into account, the link is assessed as of low sensitivity. In regard to the hazardous load route no collisions involved HV.	Link 25 and 26 are forecast to experience an increase in total traffic of up to 0.9%. It is assessed that a change in total traffic of up to 0.9% represents a **negligible** magnitude of impact.
26	A63 between Daltry Street and the A1165	Yes	Link 26 is an urban A-road located between the Mount Pleasant North roundabout and the A63 / Commercial Road junction. The link is 1.5 miles long and the collision rate is below the national average. There are six collision clusters on this link. • Cluster 33 is located on Link 26, the collisions at this cluster comprised of one fatal and three slight collisions. One collision involved a HV. • Cluster 34 is located west of the A63 / Ferensway junction and the collisions consists of one serious and eight slight collisions. Two collisions involved a HV. • Cluster 35 is located at the Ferensway junction, and the collisions consists of one serious and four slight collisions. One collision involved a HV. • Cluster 36 is located between Murdoch's Connection Bridge and Vicar Lane. The collisions at this cluster consists of four serious and six slight collisions. Three collisions involved a HV.	Links 26 and 27 are forecast to experience an increase in total traffic of up to 0.9%. and HGV traffic of 7.6% It is assessed that a change in HGV traffic of up to 7.6% represents a **negligible** magnitude of impact.

Link ID	Link Name	Hazardous Load Route	Description and Sensitivity	Impact Magnitude
			• Cluster 37 is located at the junction between the A63, Market Place and Queen Street. The collisions at this cluster consists of one serious and five slight collisions. One collision involved a HV. • Cluster 38 is located on both Link 26 and 27. The collisions recorded in the cluster consist of three serious and 18 slight collisions. One collision involved a HV. In summary there were 11 rear-end shunts, 12 collisions with pedestrians, four collisions with cyclists, eight collisions due to poor lane discipline, 12 collisions caused by a failure to give way, one collision caused by a loss of control, seven unspecified collisions. It is assessed that there is pattern of rear-end shunts, failures to give way and collisions with pedestrians along Link 26. Taking the above summary into account, the link is assessed as of high sensitivity. National Highways are currently constructing improvements known as 'A63 Castle Street improvements' due to be completed by 2026 (prior to the commencement of the Project), The aims of the improvement as detailed by National Highways will improve access to the port, congestion and safety. The link sensitivity would therefore be expected to be reduced to medium. In regard to the hazardous load route nine collisions involved HV.	
27	A63 between the A1165 and Southcoates Roundabout	Yes	Link 27 is an urban A-road and is located between the Southcoates roundabout and the Mount Pleasant North roundabout. The link is 1.1 miles long and has a collision rate below the national average. Cluster 38 is located on both Link 26 and 27 and the collisions in the cluster are reported under Link 26. Cluster 42 is located on the Southcoates roundabout, with collisions on both Links 27 and 74. The collisions consist of four serious and ten slight collisions. In summary, there were five rear-end shunts, two failures to give way, two losses of control, four instances of poor lane discipline and one collision caused by a driver on the wrong side of the road. It is assessed that there is a slight emerging pattern of rear-end shunt collisions along Link 27. Taking the above summary into account, the link is assessed as of medium sensitivity. In regard to the hazardous load route one collision involved a HV.	Links 26, 27 and 74 are forecast to experience an increase in total traffic of up to 2.3%. and HGV traffic of 21.2% It is assessed that a change in HGV traffic of up to 21.2% represents a **low** magnitude of impact.
28	A1033 (between Southcoates Roundabout to Northern Gateway	Yes	Link 28 is located between the Southcoates and Northern Gateway roundabouts. The link is 0.6 miles long and has a collision rate below the national average. Cluster 43 is located on the Southcoates roundabout. The collisions at this cluster consists of include two serious and seven slight collisions. In summary, there were five rear-end shunts, three collisions caused by a loss of control, two collisions with a pedestrian, a collision caused by poor lane discipline and two unspecified collisions. It is assessed that there is a slight emerging pattern of rear-end shunt collisions on Link 28. Taking the above summary into account, the link is assessed as of medium sensitivity. In regard to the hazardous load route one collision involved a HV.	Link 28 is forecast to experience an increase in total traffic of up to 1.2%. and HGV traffic of 9.8% It is assessed that a change in HGV traffic of up to 9.8% represents a **negligible** magnitude of impact.
30	A1033 (between Marfleet Roundabout and B1362)	Yes	Link 30 is located from the Marfleet roundabout to the A1033 / New Road roundabout. The link is an urban A-road and is 2.4 miles long and the collision rate is below the national average. Cluster 44 is located at the Somerden Roundabout on this link. The collisions consist of five slight collisions. Cluster 4 is located at the Marfleet Roundabout with collisions on both Links 30 and 51. The collisions consist of two serious and five slight collisions.	Links 30 and 51 are forecast to experience an increase in total traffic of up to 4%. It is assessed that a change in total traffic of up to 4% represents a **negligible** magnitude of impact.

Link ID	Link Name	Hazardous Load Route	Description and Sensitivity	Impact Magnitude
			In summary, there were five rear-end shunt type collisions, one loss of control, two collisions with a cyclist, two instances of poor lane discipline leading to a collision, one unspecified collision and one failure to give way resulting in a collision. It is assessed that there is an emerging pattern of rear-end shunts on this link, particularly at Cluster 4. Taking the above summary into account, the link is assessed as of high sensitivity. In regard to the hazardous load route no collisions were identified involving HV.	
31	A1033 (between Mount Pleasant North Roundabout and A165 Holderness Road)	Yes	Link 31 is located from the Mount Pleasant Roundabout to the Mount Pleasant / Holderness Road junction and is 0.4 miles long. This link has a collision rate above the national average. During the five-year study period a total of 17 collisions have occurred on Link 21. Four collisions were serious and 13 were slight, no fatalities were recorded. In addition, three collision clusters (Cluster 39, 40 and 41) are also recorded in the vicinity of Link 31. Cluster 39 is located at the Holderness Road / Mount Pleasant junction at the intersection of Links 31, 32 and 38. There were a total of 24 collisions, of which two involved HVs. Cluster 40 is also located on Link 31 at the junction between Holderness Road and Ellis Street. The five recorded collisions consist of one serious and four slight collisions. Cluster 41 is located at the Mount Pleasant North roundabout with collisions on Links 31 and 74. The collisions relevant to this link include three serious and five slight collisions. In summary, there were 11 collisions with cyclists, nine collisions with pedestrians, seven collisions caused by a failure to give way, seven rear-end shunt collisions, one collision caused by a loss of control and three unspecified collisions. It is assessed that there is an emerging pattern of collisions between vehicles and cyclists and pedestrians along Link 31. Taking the above summary into account, the link is assessed as of high sensitivity. In regard to the hazardous load route two collisions involved a HV.	Links 31, 32, 38 and 74 are forecast to experience an increase in total traffic of up to 2.7% and HGV traffic of 32.4% It is assessed that a change in HGV traffic of up to 32.4% represents a **low** magnitude of impact.
32	A165 Holderness Road (between A1033 and Maybury Road)	No	Link 32 comprises of A165 / Holderness Road between the Mount Pleasant / Holderness Road junction to Maybury Road. The link is an urban A-road and is 1.4 miles long and has a collision rate above the national average. During the study period there were 186 collisions reported. These consisted of 42 serious and 144 slight collisions, no fatalities were recorded. The collisions are summarised as follows: • 60 collisions between a vehicle and a cyclist; • 40 failures to give way resulting in a collision; • 21 collisions between a vehicle and a pedestrian; • 27 rear-end shunts; • 14 injuries to passengers on a bus, such as due to the bus stopping suddenly; • 13 instances where poor lane discipline led to a collision; • Seven unspecified collisions; and • Four losses of control leading to a collision. It is assessed that there is a pattern of collisions along Link 32 involving collisions between vehicles and pedestrians and cyclists, generally where cars have failed to give way to cyclists when at a junction. Therefore, the link is assessed as of high sensitivity.	Link 32 is forecast to experience an increase in total traffic of 0.5% and HGV traffic of 0.0%. It is assessed that a change in total traffic of up to 0.5% represents a **negligible** magnitude of impact.

Link ID	Link Name	Hazardous Load Route	Description and Sensitivity	Impact Magnitude
33	A165 Holderness Road (between Maybury Road and Main Road)	No	Link 33 comprises of the A165 / Holderness Road between Maybury Road and the Holderness Road / Main Road / Shannon Road / Ganstead Lane roundabout junction. Link 17 is an urban A-road and is 1.4 miles long and has a collision rate above the national average. A total of 67 collisions were recorded during the study period, of which, 18 were serious collisions, 18 were slight and one was fatal. There are also five clusters of collisions, Cluster 11 is located at the Holderness Road / Main Road / Shannon Road / Ganstead Lane roundabout, with collisions on both Links 33 and 35. Cluster 58 is located at the roundabout connecting Holderness Road, Diadem Grove, Shannon Road and the B1237. Cluster 59 is located south-west of the roundabout connecting Holderness Road, Diadem Grove, Shannon Road and the B1237. Cluster 60 is located at the Holderness Road / Bellfield Avenue. Cluster 61, located at the junction between Holderness Road and Bellfield Avenue. In summary there were 22 collisions with cyclists, 15 collisions caused by a failure to give way, ten rear-end shunts, three collisions caused by poor lane discipline, five collisions caused by a loss of control, five collisions with pedestrians, five other collisions and two unspecified collisions. It is assessed that there is an emerging pattern of collisions involving cars and cyclists, generally caused by a failure to give way along Link 33. Therefore, the link is assessed as of high sensitivity.	Links 33 and 35 are forecast to experience an increase in total traffic of 2.5%. It is assessed that a change in total traffic of up to 2.5% represents a **negligible** magnitude of impact.
35	A165 (between Main Street and Skirlaugh)	No	Link 35 is a rural A-road 1.9 miles long and has a collision rate above the national average. This link is located between Conniston and the Ganstead Lane / Main Road / Holderness Road / Shannon Road roundabout. During the five-year study period, a total of 17 collisions were recorded along Link 35 of which, 11 were classified as slight, five serious and one fatal. There was also one clusters of collisions, Cluster 11 identified at the Holderness Road / Main Road / Shannon Road / Ganstead Lane roundabout (Links 33 and 35). These collisions are reported under Link 33. In summary, there were four failures to give way resulting in a collision, four rear-end shunts, three collisions with a cyclist, two incidents where poor lane discipline led to a collision, two losses of control, and a collision with a pedestrian. It is assessed that there is no significant emerging pattern of collisions on Link 35. Therefore, the link is assessed as of low sensitivity.	Links 33 and 35 are forecast to experience an increase in total traffic of up to 4%. It is assessed that a change in total traffic of up to 4% represents a **negligible** magnitude of impact.
36	A165 - Skirlaugh	No	This link is through the centre of Skirlaugh and is 0.5 miles long. The A165 is a rural A-road and the collision rate is higher than the national average. During the five-year study period a total of two collisions were recorded: one slight and one serious. These two collisions comprised of rear-end shunts at crossings on this link. It is assessed that there is a slight emerging pattern of collisions at zebra crossings on Link 36. Noting the low overall numbers of collisions, the link is assessed as of low to medium sensitivity.	Link 36 is forecast to experience an increase in total traffic of 5.4%. It is assessed that a change in total traffic of up to 5.4% represents a **negligible** magnitude of impact.
37	A165 (between Skirlaugh and the A1035)	No	Link 37 is along the stretch of the A165 from Skirlaugh to the White Cross roundabout. The rural A-road is 3 miles long and the rate of collisions along the link is higher than the national average. During the five year study period, a total of 11 collisions were recorded: six slight and five serious. There is also a cluster of collisions, Cluster 1 located at the intersection of Link 6 and 37 at the Whitecross roundabout. These collisions are reported in Link 6. In summary, there were two rear-end shunt type collisions, four losses of control and two failures to give way at Link 37. It is assessed that there is a slight emerging pattern of collisions caused by a loss of control, the link is therefore assessed as of medium sensitivity.	Link 37 is forecast to experience an increase in total traffic of 5.6%. It is assessed that a change in total traffic of up to 5.6% represents a **negligible** magnitude of impact.
38	A1033 (between Holderness Road and Sutton Road)	Yes	Link 38 is an urban A-road 2.1 miles long and has a collision rate above the national average. The link is located between the Holderness Road / Mount Pleasant junction and the Sutton Road / Holwell Road roundabout. During the five-year study period a total of 72 collisions have occurred on Link 38. Eighteen collisions were serious and 54 were slight, no fatalities were recorded.	Links 31, 32 and 38 are forecast to experience an increase in total traffic of up to 2.7% and HGV traffic of 32.4%

Link ID	Link Name	Hazardous Load Route	Description and Sensitivity	Impact Magnitude
			In addition, six collision clusters (Cluster 39, 53, 54, 55, 56 and 57) have also occurred in the vicinity of Link 38. Cluster 39 is located at the intersection of Links 31, 32 and 38, the Holderness Road / Mount Pleasant junction. Cluster 53 is located at the Sutton Road / Holwell Road roundabout. Cluster 54 is located at the junction between the A1033 and Ann Watson Street Cluster 55 is located at the roundabout between the A1165 and Ferry Lane. Cluster 56 is located at the Mount Pleasant / A1165 / Cleveland Street roundabout. Cluster 57 is located at the roundabout connecting Mount Pleasant and James Reckitt Avenue In summary, there were 16 rear-end shunts, 22 collisions with cyclists, four collisions with pedestrians, eight collisions caused by poor lane discipline, seven collisions caused by a loss of control, four unspecified collisions and three collisions caused by a failure to give way. It is assessed that there is an emerging pattern of collisions with cyclists and rear-end shunts along Link 38. Taking the above summary into account, the link is assessed as of high sensitivity. In regard to the hazardous load route five collisions involved a HV.	It is assessed that a change in HGV traffic of up to 32.4% represents a **low** magnitude of impact.
39	A1033 (between Howell Road and Stockholm Road)	Yes	Link 39 comprises the A1033 Sutton Road between the Holwell Road / Sutton Road roundabout and the Sutton Road / Ennerdale (A1033) roundabout. Link 39 is an urban A-road and is 0.6 miles long and has a collision rate above the national average. During the five-year study period a total of 23 collisions have occurred on Link 39. Four collisions were serious, 17 were slight and two were fatal. In addition, two collision clusters (Cluster 51 and 52) have also occurred in the vicinity of Link 39. Cluster 51 is located at the roundabout connecting Sutton Road, the A1033 and Stockholm Road, with collisions also on Link 40. Cluster 52 is located on Sutton Road on the approach to the Sutton Road / Holwell Road roundabout. In summary there were 12 collisions with cyclists, three collisions with pedestrians, five rear-end shunts, one collision caused by poor lane discipline, five collisions caused by a failure to give way, one loss of control and an unspecified collision. It is assessed that there is an emerging pattern of collisions between vehicles and cyclists along Link 39. Taking the above summary into account, the link is assessed as of high sensitivity. In regard to the hazardous load route, one collision involved a HV.	Link 39 and 40 are forecast to experience an increase in total traffic of up to 2.9% and HGV traffic of 55.4% It is assessed that a change in HGV traffic of up to 55.4% represents a **medium** magnitude of impact.
40	A1033 (between Stockholm Road and Roebank Roundabout)	Yes	Link 40 comprises the A1033 from the Ennerdale roundabout to the Roebank roundabout. Link 40 is an urban A-road and is one mile long and has a collision rate below the national average. In addition, three collision clusters (Cluster 49, 50 and 51) have also occurred in the vicinity of Link 40. Cluster 49 is located at the Roebank Roundabout. Cluster 50 is located at the A1033 / Thomas Clarkson Way / Emmerdale roundabout. Cluster 51 is located at the roundabout connecting Sutton Road, the A1033 and Stockholm Road, with collisions also on Link 39. In summary, there were a total of four collisions between vehicles and cyclists, three rear-end shunts, two losses of control leading to a collision and one instance where poor lane discipline led to a collision. It is assessed that whilst there is a slight pattern of collisions involving cyclists, there is no significant emerging pattern to the location of these collisions. Taking the above summary into account, the link is assessed as of medium sensitivity. In regard to the hazardous load route, no collisions were identified as involving HV.	Links 39 and 40 are forecast to experience an increase in total traffic of up to 2.9%. It is assessed that a change in total traffic of up to 2.9% represents a **negligible** magnitude of impact.

Link ID	Link Name	Hazardous Load Route	Description and Sensitivity	Impact Magnitude
41	A1033 (between Roebank Roundabout and Dunswell Roundabout)	Yes	Link 41 comprises the A1033 from the Roebank roundabout to the Dunswell Roundabout. Link 41 is an urban A-road and is 0.8 miles long and has a collision rate above the national average. During the five-year study period there has been a total of 40 collisions reported on Link 41: nine serious collisions and 31 slight collisions, with no fatal collisions reported. In addition, four collision clusters (Cluster 45, 46, 47 and 48) have also occurred in the vicinity of Link 41. Cluster 45 is located at the Dunswell roundabout on Link 41. Cluster 46 is located on the Ennerdale Lift bridge, Cluster 47 is located on the Raich Carter Way / Gibraltar Road / Barnes Way roundabout and Cluster 48 is located at the Roebank roundabout. In summary, there were 17 rear-end shunts, 11 collisions with a cyclist, one collision with a pedestrian, seven collisions caused by poor lane discipline, two collisions caused by a failure to give way and two caused by a loss of control. It is assessed that there is an emerging pattern of rear-end shunt collisions and collisions with cyclists along Link 41. Taking the above summary into account, the link is assessed as of high sensitivity. In regard to the hazardous load route, no collisions were identified as involving HV.	Link 41 is forecast to experience an increase in total traffic of up to 4.2% and HGV traffic of 32.4%. It is assessed that a change in total traffic of up to 32.4% represents a **low** magnitude of impact.
42	A1079 (between Dunswell Roundabout and Jocks Lodge Roundabout)	Yes	Link 42 is the A1079 between Dunswell Roundabout and Jocks Lodge Roundabout and is a rural A-road. The link has a collision rate below the national average. Cluster 24 is located on the Dunswell roundabout on Link 42 and the collisions consist of three rear-end shunts on approach to the roundabout. It is assessed that there is no significant emerging pattern of collisions on Link 42. Therefore, the link is assessed as of low sensitivity.	Link 42 is forecast to experience an increase in total traffic of up to 5.3%. It is assessed that a change in total traffic of up to 5.3% represents a **negligible** magnitude of impact.
43	A1174 (between Dunswell Roundabout and the A164)	No	Link 43 is a rural A-road and is 3.3 miles long with a collision rate above the national average. The link is located between the Dunswell roundabout and the Eastfields Road / A164 / Hull Road roundabout. A total of 35 collisions were recorded in the study period, of which 25 collisions were slight and ten were serious with no fatalities recorded. In addition, three collision clusters (Cluster 21, 22 and 23) have also occurred in the vicinity of Link 43. Cluster 21 is located along Link 43 at the A1174 / Dunswell Lane junction. Cluster 22 is located along Link 43 between the A1174 and the junction with the Meadows and Dene Close. Cluster 23 is also located along Link 43 at the Dunswell roundabout. In summary, there were 19 rear-end shunts, 11 collisions with cyclists, four collisions due to poor lane discipline, three collisions with pedestrians, two collisions due to a loss of control, one collision due to a failure to give way and one unspecified collision. It is assessed that there is an emerging pattern of rear-end shunts and collisions with cyclists (particularly at the Dunswell roundabout). Therefore, the link is assessed as of high sensitivity.	Link 43 is forecast to experience an increase in total traffic of 2.3% and HGV traffic of 0.0% It is assessed that a change in total traffic of up to 2.3% represents a **negligible** magnitude of impact.
45	A164 (between the A1174 and Jocks Lodge)	Yes	Link 45 is located between the Ward Way / A164 roundabout and the Lincoln Way / A164 / Shepherd Lane roundabout. The link is a rural A-road of 0.4 miles in length with a collision rate above the national average. The collisions along Link 45 comprised of: • A rear-end shunt collision on approach to a roundabout involving two cars; and • A rear-end shunt type collision on the carriageway involving two vehicles. It is assessed that two rear-end shunts at discrete geographical locations would not indicate an emerging pattern of collisions. Taking the above summary into account, the link is assessed as of low sensitivity. In regard to the hazardous load route, no collisions were identified as involving HV.	Link 45 is forecast to experience an increase in total traffic of up to 7.7%. It is assessed that a change in total traffic of up to 7.7% represents a **negligible** magnitude of impact.
49	Jackson Street / Daltry Street	Yes	Link 49 is an urban road located south of the A63 / Clive Sullivan Way and leading to a slip road onto the A63. The road is 0.2 miles long and has a collision rate above the national average. A total of six collisions were recorded during the study period, of which five were slight and one was serious. In addition, two collision clusters (Cluster 27 and 32) have also occurred in the vicinity of Link 49. Cluster 27 is present on Link 49 and is located at the junction between Daltry and Jackson Street. Cluster 32 is also located at the roundabout at the northern extent of Link 49.	Link 49 is forecast to experience an increase in total traffic of up to 3.4%. It is assessed that a change in total traffic of up to 3.4% represents a **negligible** magnitude of impact.

Link ID	Link Name	Hazardous Load Route	Description and Sensitivity	Impact Magnitude
			In summary, there were five rear-end shunts, a collision between a car and cyclist a loss of control collision and four failures to give way. It is assessed that there is a slight emerging pattern of rear end shunt collisions along Link 49. Taking the above summary into account, the link is assessed as of medium sensitivity. In regard to the hazardous load route, no collisions were identified as involving HV.	
50	English Street/ Kingston Street/Commercial Road	Yes	Link 50 is an urban road located between Daltry Street and the Kingston Street / Commercial Road / Manor House Street roundabout. The road is 0.6 miles long and has a collision rate that is above the national average. A total of nine collisions were recorded during the study period, these include eight slight collisions and one serious collision. One cluster of collisions Cluster 26 is located on Link 50 at the junction between English and St James Street. In summary, there were four collisions caused by a failure to give way, two collisions with pedestrians, two unspecified collisions and one collision with a cyclist. It is assessed that there is no significant emerging pattern to the type and location of collisions along Link 50. Taking the above summary into account, the link is assessed as of low sensitivity. In regard to the hazardous load route, no collisions were identified as involving HV.	Link 50 is forecast to experience an increase in total traffic of up to 4.6%. It is assessed that a change in total traffic of up to 4.6% represents a **negligible** magnitude of impact.
51	Maybury Road/Marfleet Lane	No	This link is an urban road 1.7 miles long, between A165 / Holderness Road and the Marfleet roundabout. The link has a collision rate above the national average. During the study period, there have been 75 collisions recorded along Link 51. These comprise of 15 serious and 60 slight collisions; there were no fatal collisions recorded. There were also seven clusters of collisions recorded (Clusters 4, 5, 6, 7, 8, 9 and 10). • Cluster 4 is located on the Marfleet roundabout with collisions also on Link 30; • Cluster 5 is located on Marfleet Avenue / Lane between the junctions with Burma Drive and Marfleet Avenue; • Cluster 6 is located at the junction between Marfleet Lane and Preston Road; • Cluster 7 is located at the junction between Marfleet Lane and Bessingby Grove and Sutton Way; • Cluster 8 is located at the junction between Marfleet Lane and Staveley Road; • Cluster 9 is located on Marfleet Lane between the junction with Maybury Road and Hopewell Road; and • Cluster 10 is located at the junction between Maybury Road and Hebrides Close. In summary, there were 15 collisions due to a failure to give way, nine rear-end shunts, 20 collisions between a vehicle and a cyclist, 12 collisions between a vehicle and a pedestrian, two unspecified collisions, six collisions due to a loss of control, two collisions due to poor lane discipline and five other types of collisions. It is assessed that the nature of the collisions along this link highlights an emerging pattern of collisions involving cyclists and pedestrians as well as failure to give-way at junctions. The link is therefore assessed as of high sensitivity.	Link 51 is forecast to experience an increase in total traffic of up to 3.4% and HGV traffic of 134% It is assessed that a change in total traffic of up to 134% represents a **high** magnitude of impact.
52	Coppleflat Lane between A164 to OCS	Yes	Link 52 is located off the A164 and is one mile long. The rural road has a collision rate above the national average. A total of four recorded collisions, two slight and two serious were recorded during the study periods, these consist of: • A motorcyclist falling off at a bend in the road due to muddy conditions; • A car crossing onto the opposite side of the road on a bend, colliding with another car; • A motorcyclist and a vehicle collided when at a bend in the road; and • A vehicle lost control at a bend, turning on its side in a verge. It should be noted that all four collisions occurred at the same bend in the road. It is therefore assessed that there is an emerging pattern to the location of the loss of control collisions on Link 52. Taking the above summary into account, the link is assessed as of high sensitivity.	Link 52 is forecast to experience an increase in total traffic of up to 42.7%. It is assessed that a change in total traffic of up to 42.7% represents a **medium** magnitude of impact.

Link ID	Link Name	Hazardous Load Route	Description and Sensitivity	Impact Magnitude
			In regard to the hazardous load route, no collisions were identified as involving HV.	
54	B1248 (between the A1035 and Rootas Lane)	No	Link 54 connects Rootas Lane and the Dog Kennel Lane roundabout. The rural A-road is 1.1 miles long and has a collision rate above the national average. During the five-year study period, eight collisions occurred on Link 54, including four slight and four serious collisions. Cluster 12 is also located on this link at the junction between the B1248 and Main Street. The collisions at this cluster include, three rear-end shunt type collisions at the junction; and four failures to give way at the junction. The remaining collisions along Link 54 (outside the cluster) consists of a rear end shunt between two vehicles. In summary, there were four failures to give way resulting in a collision and four rear end shunts. It is assessed that there is a slight emerging pattern of failure to give way / rear end shunt collisions at the junction fit he B1248 and Main Street. The link is therefore assessed as of medium sensitivity.	Link 54 is forecast to experience an increase in total traffic of up to 2.9%. It is assessed that a change in total traffic of up to 2.9% represents a **negligible** magnitude of impact.
57	Walkington Heads	No	Link 57 is a rural road from the Newbald Road / Coppleflat Lane / Walkington Heads junction to just west of the Walkington Heads/Dale Gate junction. The link is 1.2 miles long and has a collision rate above the national average. During the five-year study period, six collisions occurred on Link 57, including five slight and one serious collision. One cluster of collisions Cluster 14 is located on Link 57 at the junction between Walkington Heads, Coppleflat Lane and Newbald Road, with collisions on Links 57 and 61. In summary, there were a number of collisions at the Newbald Road / Coppleflat Lane / Walkington Heads junction, including two rear-end shunts, a collision with a cyclist, four failures to give way and a loss of control. It is assessed that there is a slight emerging pattern of collisions caused by a failure to give way at the junction. The link is therefore assessed as of medium sensitivity.	Links 57 and 61 are forecast to experience an increase in total traffic of up to 3.4%. It is assessed that a change in total traffic of up to 3.4% represents a **negligible** magnitude of impact.
58	Leconfield Road / Miles Lane	No	240. Link 58 is a rural road of 1.6 miles in length and has a collision rate above the national average. The link is located between Cherry Burton and Leconfield. Four collisions were recorded during the study period, three of which were slight and one was serious. The collisions consist of: • A collision between a car with a horse box trailer and a cyclist on a narrow lane; • Two incidents where a vehicle travelling around the bend too quickly caused the vehicle to slip and turn on its side or roof; and • A vehicle negotiating a bend too quickly and colliding with a bush on the side of the road. It should be noted that three collisions occurred at the same bend in the road. It is therefore assessed that there is a slight emerging pattern to the location of the loss of control collisions on Link 58. Noting the relatively limited number of collisions the link is assessed as of medium sensitivity.	Link 58 is forecast to experience an increase in total traffic of up to 3.9%. It is assessed that a change in total traffic of up to 3.9% represents a **negligible** magnitude of impact.
60	Killingwoldgraves Lane	No	Link 60 is a rural road from Coppleflat Lane / Walkington Heads / Newbald Road junction to the Killingwoldgraves roundabout. The link is 0.6 miles long and has a collision rate above the national average. The collisions along Link 60 consist of: • A driver of a vehicle having a medical episode, causing them to swerve off the road into a ditch; and • A motorcyclist losing control at a bend in the road, causing them to hit the kerb and fall off their bike. Cluster 14 is also located at the Killingwoldgraves roundabout at the intersection of links 57, 60 and 61, these collisions are reported under Link 57. Noting there were just two collisions along Link 60 it is assessed that there is no emerging pattern of collisions. Therefore, the link is assessed as of low sensitivity.	Links 57, 60 and 61 are forecast to experience an increase in total traffic of up 3.4%. It is assessed that a change in total traffic of up to 3.4% represents a **negligible** magnitude of impact.

Link ID	Link Name	Hazardous Load Route	Description and Sensitivity	Impact Magnitude
61	Coppleflat Lane (between Walkington Heads and Broadgate)	No	Link 61 is a rural road of 0.8 miles in length with a collision rate above the national average. The link is located between the Coppleflat Lane / Walkington Heads / Newbald Road junction and the B1230 / Coppleflat Lane junction. Five collisions were recorded during the study period, three of which were slight and two were serious. Cluster 14 is also located at the junction between Walkington Heads, Coppleflat Lane and Newbald Road, at the intersection of Links 57, 60 and 61, these collisions are reported under Link 57. In summary, there were two collisions caused by poor lane discipline and a collision with a cyclist. It is assessed that there is no significant emerging pattern of along Link 61. Therefore, the link is assessed as of low sensitivity.	Links 57, 60 and 61 are forecast to experience an increase in total traffic of up to 3.4%. It is assessed that a change in total traffic of up to 3.4% represents a **negligible** magnitude of impact.
62	York Road	No	Link 62 comprises the A1174 between the Killingwoldgraves roundabout to the edge of the Traffic and Transport Study Area on the outskirts of Beverley. Link 62 is a rural A-road and is 1.3 miles long and has a collision rate above the national average. Cluster 13 is also located at the Killingwoldgraves roundabout. In summary, there were three collisions with pedestrians, a collision with a cow, a failure to give way and an unspecified collision. It is assessed that there is no significant emerging pattern of collisions along Link 62. The link therefore is assessed as of low sensitivity.	Link 62 is forecast to experience an increase in total traffic of up to1.6%. It is assessed that a change in total traffic of up to 1.6% represents a **negligible** magnitude of impact.
63	A164 (between Driffiled Road Roundabout and Old Road)	No	Link 63 is an A-road connecting Leconfield and Beverley. The link is 1.8 miles long and the rate of collisions is higher than the national average. Eight collisions were recorded during the study period, four of which were slight and four were serious, no fatalities were recorded. Cluster 3 is also located on Link 63 and the collisions in this cluster are reported under Link 9. In summary, there was one rear-end shunt, a collision with a pedestrian, two collisions due to poor lane discipline, one collision due to a loss of control and an injured bus passenger. It is assessed that there is no significant emerging pattern of collisions along Link 63. The link is therefore assessed as of low sensitivity.	Links 63 is forecast to experience an increase in total traffic of up to 5.4%. It is assessed that a change in total traffic of up to 5.4% represents a **negligible** magnitude of impact.
66	A164 (between Onshore EEC and Station Road)	No	This link is a rural A-road located on the A164 south of Station Road. The road is 0.6 miles long and has a collision rate above the national average. There were five recorded collisions for the period, four of which were slight and one was serious. In summary, there were three collisions caused by a loss of control, one collision caused by poor lane discipline, a collision due to poor observation. It is assessed that there is no significant emerging pattern of collisions along Link 66. The link is therefore assessed as of low sensitivity.	Link 66 is forecast to experience an increase in total traffic of up to 2.2%. It is assessed that a change in total traffic of up to 2.2% represents a **negligible** magnitude of impact.
71	B1249 (Bridlington Balk)	No	Link 71 is located between Beeford and North Frodingham on the B1249. The road is 0.5 miles long and has a collision rate above the national average. During the five-year study period a total of four collisions were recorded, of which three were slight and one was serious. To summarise, two collisions occurred due to a driver losing control and two collisions occurred due to poor observation. It is assessed that there is no significant emerging pattern of collisions along Link 71. The link is therefore assessed as of low sensitivity.	Link 71 is forecast to experience an increase in total traffic of up to 16.8%. It is assessed that a change in total traffic of up to 16.8% represents a **low** magnitude of impact.
72	North Frodingham Road	No	Link 72 is located on Cross Lane, south of North Frodingham. The link is 2.7 miles long and has a collision rate above the national average. During the five-year study period a total of seven collisions were recorded, of which one was fatal, two were serious and four were slight. In summary, all seven collisions were caused by a loss of control. It is therefore assessed that there is an emerging pattern of loss of control collisions along Link 72. Notwithstanding, the collision locations have been investigated and they have all occurred at different sections along the link. This pattern of loss of control collisions would be typical for a rural road with many bends through its length. The link therefore is assessed as of medium sensitivity.	Link 72 is forecast to experience an increase in total traffic of up to 16.4%. It is assessed that a change in total traffic of up to 16.4% represents a **low** magnitude of impact.

Link ID	Link Name	Hazardous Load Route	Description and Sensitivity	Impact Magnitude
74	A1033 (between Mount Pleasant North Roundabout and Southcoates Roundabout)	Yes	Link 74 is a rural A-road located between the Mount Pleasant North roundabout and the Southcoates roundabout. This link has a collision rate above the national average. During the five-year study period, 16 collisions occurred on Link 74, including 13 slight and three serious collisions; there were no fatal collisions recorded. There were also two clusters of collisions recorded (Clusters 41 and 42). Cluster 41 is located at the Mount Pleasant North roundabout and the collisions are reported under Links 31. Cluster 42 is located on the Southcoates roundabout and the collisions are reported under Link 27. To summarise, there were a total of two collisions with cyclists, two rear-end shunts, two collisions due to poor observation and a collision due to a loss of control. It is therefore assessed that there is no significant emerging pattern of collisions along Link 74. Taking the above summary into account, the link is assessed as of low sensitivity. In regard to the hazardous load route, no collisions were identified as involving HV.	Link 31 is forecast to experience an increase in total traffic of up to 2.7%. It is assessed that a change in total traffic of up to 2.7% represents a **negligible** magnitude of impact.
75	A63 (Off ramp to Mount Pleasant North Roundabout)	Yes	Link 75 is a rural A-road 0.2 miles in length and has a collision rate above the national average. The link is a slip road off the A63 and the Mount Pleasant North roundabout. There was one slight collision and a fatal collision during the five-year study period. In summary, there was a collision caused by a loss of control due to a medical episode and a failure to give way. It is therefore assessed that there is no significant emerging pattern of collisions along Link 75. Taking the above summary into account, the link is assessed as of low sensitivity. In regard to the hazardous load route, no collisions were identified as involving HV.	Link 75 is forecast to experience an increase in total traffic of up to 2.7%. It is assessed that a change in total traffic of up to 2.7% represents a **negligible** magnitude of impact.
76	A1079 (between Killingravesworld Roundabout and west Bishop Burton)	No	Link 76 is a rural A-road of one mile in length and has a collision rate above the national average. The link is located from the A1079 / Finkle Street junction to the Killingwoldgraves roundabout. There were five slight collisions during the five-year study period; no fatalities were recorded. Cluster 13 is also located at the Killingwoldgraves roundabout, these collisions are reported under Link 12. In summary, there were two collisions caused by a failure to give way, an unspecified collision and an injured bus passenger. It is therefore assessed that there is no significant emerging pattern of collisions along Link 76. The link is therefore assessed as of low sensitivity.	Link 76 is forecast to experience an increase in total traffic of up to 3.3%. It is assessed that a change in total traffic of up to 3.3% represents **negligible** magnitude of impact.
79	Grange Road	No	This link is located off the A165 and is 0.5 miles long. The rural road has one recorded collision and has a collision rate above the national average rate. The collision was slight and resulted from the driver of a car losing control in icy conditions, causing them to skid and land on the vehicle's side in a ditch. It is therefore assessed that there is no significant emerging pattern of collisions along Link 79. Noting the single collision the link is therefore assessed as of negligible sensitivity.	Link 79 is forecast to experience an increase in total traffic of up to 73.9%. It is assessed that a change in total traffic of up to 73.9% represents a **high** magnitude of impact.
80	A15 - Humber Bridge	No	Link 80 is located over the Humber River, ending at the Wingfield Farm roundabout. The link is an urban A-road and is 2.4 miles long. The rate of collisions is below the national average. There was one clusters of collisions recorded (Clusters 20) along Link 80. Cluster 20 is located on the Wingfield Farm roundabout. In summary, there were six rear-end shunts and a collision caused by poor lane discipline. It is therefore assessed that there is a slight emerging pattern of rear end shunt collisions along Link 80. The link therefore is assessed as of medium sensitivity.	Link 80 is forecast to experience an increase in total traffic of up to 1.6%. It is assessed that a change in total traffic of up to 1.6% represents a **negligible** magnitude of impact.
83	North Street (from West Street to onshore ECC)	No	Link 83 is a rural road located north of the North / East / South / West Street junction in Leven. The link is 0.3 miles long and has a collision rate above the national average. One slight collision and one serious collision were recorded along the link during the five-year study period. The collisions consist of a rear-end shunt at a roundabout between two vehicles; and a serious collision between a speeding vehicle and a cyclist who came out of a junction. It is assessed that there is no significant emerging pattern of collisions along Link 83. The link is therefore assessed as of low sensitivity.	Link 83 is forecast to experience an increase in total traffic of up to 2.4%. It is assessed that a change in total traffic of up to 2.4% represents a **negligible** magnitude of impact.

Link ID	Link Name	Hazardous Load Route	Description and Sensitivity	Impact Magnitude
86	B1242 (between Cliff Road and the onshore ECC)	No	Link 86 is a rural B-road, located from the B1242 / 1249 / Back Street junction in Skipsea to the B1242. The road is 0.1 miles long and has a collision rate above the national average. Two slight collisions were recorded along the link. The collisions consist of two failures to give way at a junction by a van or an unspecified vehicle, resulting in a collision with an oncoming vehicle. It is assessed that there is no significant emerging pattern of collisions along Link 86. The link is therefore assessed as of low sensitivity.	Link 86 is forecast to experience an increase in total traffic of up to 5.2%. It is assessed that a change in total traffic of up to 5.2% represents a **negligible** magnitude of impact.
87	Beeford Road (between the A165 to Bewholme Lane)	No	Link 87 is a rural B-road located from the B1242 / 1249 / Back Street junction in Skipsea to the B1249 / A165 junction in Beeford. The link has a collision rate above the national average. A total of 11 collisions were recorded along the link, of which ten were slight and one was fatal. In summary, there were seven collisions caused by a loss of control, one caused by a failure to give way, two caused by poor lane discipline and one caused by unspecified reasons. It is assessed that there is an emerging pattern of loss of control collisions along Link 87. Notwithstanding, the collision locations have been investigated and they have all occurred at different sections along the link. This pattern of loss of collisions would be typical for a rural road with many bends through its length. The link therefore is assessed as of medium sensitivity.	Link 87 is forecast to experience an increase in total traffic of up to 12.9%. It is assessed that a change in total traffic of up to 12.9% represents a **low** magnitude of impact.
88	B1242 (between the A165 to Skipsea	No	Link 88 consists of the B1242 between Skipsea and the A165 at Lissett. It is a rural local road and is 2.5 miles in length and has a collision rate above the national average. A total of seven collisions were recorded along Link 88, of which four were classified as slight and three serious. In summary, the collisions comprised of two losses of control, a collision between a car and two pedestrians, an unspecified collision, and two collisions caused by poor lane discipline. It is assessed that there is no significant emerging pattern of collisions along Link 88. The link is therefore assessed as of low sensitivity.	Link 88 is forecast to experience an increase in total traffic of up to 3.6%. It is assessed that a change in total traffic of up to 3.6% represents a **negligible** magnitude of impact.
99	B1230 (Broadgate, East)	No	This link is a rural road of 0.5 miles in length and has a collision rate above the national average. The link is located off Carr Lane, near Leven and one serious collision was recorded during the study period. The collisions involved a motorcyclist losing control and entering a ditch. It is assessed that there is no significant emerging pattern of collisions along Link 99. Noting the single collision on the link, the link is therefore assessed as of negligible sensitivity.	Link 99 is forecast to experience an increase in total traffic of up to 64.3%. It is assessed that a change in total traffic of up to 64.3% represents a **high** magnitude of impact.

26.7.1.5.2 Effect Significance

241. **Table 26-28** provides a summary of the sensitivity of each receptor, the magnitude of impact and an evaluation of the significance of road safety (including hazardous loads) effect.

Table 26-28 Summary of Road Safety (Including Hazardous Loads) Significance Effects

Link	Link Sensitivity	Magnitude of Road Safety Impact	Significance of Effect	Significant in EIA Terms
79, 99	**Negligible**	**High**	**Minor**	**Not significant**
6, 18, 25, 35, 42, 45, 50, 60, 61, 62, 63, 66, 74, 75, 76, 83, 86, 88	**Low**	**Negligible**	**Negligible**	**Not significant**
9, 10, 11, 12, 71		**Low**	**Minor**	**Not significant**
16, 22, 23, 26, 36, 37, 40, 49, 54, 57, 58, 80, 87	**Medium**	**Negligible**	**Minor**	**Not significant**
4, 27, 72		**Low**	**Minor**	**Not significant**
20, 21, 24, 28, 30, 32, 33, 43	**High**	**Negligible**	**Minor**	**Not significant**
17, 31, 38, 41		**Low**	**Moderate**	**Significant**
39, 52		**Medium**	**Major**	**Significant**
51		**High**	**Major**	**Significant**

26.7.1.5.3 Additional Mitigation and Residual Effect

242. **Table 26-28** identifies potentially significant road safety effects along Links 17, 31, 38, 39, 41, 51 and 52.

243. Noting the temporary nature of the Project's construction phase, it is proposed that mitigation measures would focus upon management measures, rather than physical highway improvements. Management measures could include limiting peak daily traffic flows along these links or enhanced driver inductions / training.

244. Links 17, 31, 38, 39, 41, 51 and 52 all exhibit significant baseline road safety issues. The Project's effects upon these links primarily relate to the potential for an increase in HGV traffic to impact upon a link with a pattern of collisions between vehicles and pedestrians / cyclists. With regard to Links 31, 38 and 39, the assessment also identifies collisions involving HGV which could suggest an increased risk to the movement of hazardous loads.

245. It is proposed that following the publication of this PEIR, these locations (Links 17, 31, 38, 39, 41, 51 and 52) will be discussed with the relevant highways authorities to understand if they have recently completed or have any planned highway works which could assist in reducing collisions (and associated sensitivity) at these locations.

246. If improvements are not planned / completed, it would instead be proposed to discuss and agree an acceptable level of HGV trips that could be accommodated via these links with the relevant highways authorities. Measures to reduce peak daily trips could include:

- Stockpiling of materials to reduce peak daily HGV demand;
- Backhauling, i.e. using laden vehicles to import stone and export excavated material;
- Use of local supply chain, to reduce the number of new HGV trips entering the Traffic and Transport Study Area;
- Optimising the size of HGV to reduce the total number;
- Re-alignment of critical construction activities to reduce the overlap of deliveries for peak construction activities;
- Working with the appointed Principal Contractor(s) to seek engineering refinements to reduce material quantities and therefore HGV numbers;
- The reuse of materials onsite to reduce offsite HGV trips, e.g. using excavated materials to form bunds, etc; and
- Restricting the routes utilising Links 31, 38 and 39 from transporting potential hazardous loads.

247. In addition to reducing HGV trips along Links 17, 31, 38, 39, 41, 51 and 52, it is also proposed that HGV drivers would be provided with enhanced inductions highlighting the potential risks along these links.

248. It is assessed that the proposed mitigation measures for managing HGV trips along Links 17, 31, 38, 39, 41 and 51 would reduce the risk associated with these types of vehicles and as such it would be more appropriate to consider the effects of the total change in traffic along these links, rather than HGV component. It is assessed that a change in total traffic of up to 6.8% would result in a negligible residual road safety effect.

249. With regard to Link 52, this link serves access to OCS Zone 8 and is forecast to experience an increase in total traffic of 42.7% with the addition of 1,262 total construction vehicles. The identified emerging pattern of loss of control collisions occurs on the bend south of the proposed OCS Zone 8 access (AP42a and AP42b). It is proposed that a reduction in speed limit to 40mph at this location is required to achieve the appropriate forward visibility splays at AP42a and AP42b. It is assessed that this reduction in speed limit from 60mph to 40mph would reduce vehicle speeds at this bend, thereby reducing the risk of loss of control collisions. The sensitivity of Link 52 can therefore be reduced from high to **low**. The initial access designs are detailed in **Annex 26.2.13** of **Volume 2, Appendix 26.2 Transport Assessment**.

250. The additional mitigation measures outlined are contained within the draft version of the **Outline Construction Traffic Management Plan** (document reference 8.15) (see **Table 26-35**, Commitment ID CO73) and will be further refined at ES stage.

251. With the adoption of additional mitigation measures for Links 17, 31, 38, 39 and 41, the magnitude of impact would be **negligible** on **low** to **medium** sensitive receptors. The residual effect is therefore of **negligible** or **minor adverse** significance, which is **not significant** in EIA terms.

252. With the adoption of additional mitigation measures on Link 52, the magnitude of impact would be **medium** on a **low** sensitive receptor. The residual effect is therefore of **minor adverse** significance, which is **not significant** in EIA terms.

26.7.1.6 Impact on Driver Delay (Capacity) (TT-C-05)

253. The driver delay (capacity) Impact are delays induced by the highway networks' lack of spare capacity to accommodate additional traffic flows.

254. The EATM screening thresholds do not apply to the impact of driver delay. The impact is defined as potentially significant when the highway network surrounding the development under consideration is at or close to capacity (congested).

255. Recognising the extent of the Traffic and Transport Study Area (approximately 120km of highway network), a proportionate approach to the assessment of driver delay (capacity) effects has been discussed with the relevant highway authorities.

256. At the second meeting of ETG8 held on 30th September 2024, it was agreed (see **Volume 2, Appendix 26.1 Consultation Responses for Traffic and Transport**) that the assessment of driver delay (capacity) should present details of the peak hour turning counts in traffic flows at all main junctions within the highway network within the Traffic and Transport Study Area. This will define the scope of further detailed technical assessment required to be undertaken at ES stage and be included in the DCO application.

257. **Table 26-29** therefore provides details of the peak construction traffic turning counts for the Project on all identified junctions within the Traffic and Transport Study Area. Identified junctions are presented graphically in **Figure 26-5.** The forecast hourly traffic flows have been extrapolated from daily traffic flows presented in **Table 26-20** applying the following principles:

- During the morning peak (07:30 – 09:00), industry experience indicates that the majority of the construction workforce would have already arrived in order to be available to start work at 07:00 and maximise productivity during the defined working hours for the Project (07:00 – 19:00). Equally, experience indicates that employees would leave after 18:00 in the evening thus avoiding the evening peak period.
- In order to consider an absolute worst-case scenario for capacity impacts, it has however, been assumed that up to 25% of the employee demand would occur during the morning and evening peak hours and that one twelfth of daily HGV movements would also occur during that period.

Table 26-29 Construction Turning Count Flows

Junction ID	Junction Description	Peak Hour Turning Counts for the Project		
		LV	HGV	Total
1	A165 / B1242	2	11	13
2	A165 / B1249	24	26	50
3	B1249 / B1242	11	11	22
4	A165 / Dunnington Lane	24	30	54
5	A165 / Grange Road	62	30	92
6	A165 / New Road	62	30	92
7	A165 / A1035 / Hornsea Road	62	30	92
8	A165 / A1035 / Beverley Road	75	34	109
9	A164 / A1035	97	34	131
10	A164 / A1035 / Driffield Road	89	34	123
11	A1035 / Malton Road	78	34	112
12	A1035 / B1248	87	34	121

Junction ID	Junction Description	Peak Hour Turning Counts for the Project		
		LV	HGV	Total
13	A1035 / A1079 / A1174	94	34	128
14	Jocks Lodge Roundabout (A164 / A1079)	208	34	242
15	A164 / Dunflat Road	99	26	125
16	A164 / Hartland Way	109	34	143
17	A164 / Castle Road	78	34	113
18	A164 / B1232	63	34	97
19	A15 / A164	54	34	88
20	A15 / Boothferry Road	19	34	53
21	A63 / A1166	0	34	34
22	A63 / A1079 (Castle Street Improvements)	0	34	34
23	A1165 / A1033 / Hedon road	3	34	37
24	Eales Road / South Bridge Road	3	34	37
25	A63 / Hedon Road / Southcoates Lane	0	34	34
26	A1033 / King Georges Dock	0	34	34
27	A1033 / Marfleets Avenue	4	34	38
28	A1033 / Somerden Road	4	34	38
29	Neptune Street / Jackson Street	0	34	34
30	Rawling Way / Hessler Road / Daily Street	0	34	34
31	A165 (Holderness Way) /Mount Pleasant	7	34	41

Junction ID	Junction Description	Peak Hour Turning Counts for the Project		
		LV	HGV	Total
32	Mount Pleasant / James Ricket Avenue	3	34	37
33	Mount Pleasant / Cleveland Street	3	34	37
34	A165 / Chamberlain Road	3	34	37
35	A1033 / A1165 / Ferry Lane	3	34	37
36	A1033 / B1237	3	34	37
37	A1033 / Sutton Road	3	34	37
38	A1033 / Stockholme Road	3	34	37
39	A1033 / John Newton Way / Runnymede Way	17	34	51
40	A1079 / A1174 / A1033	52	34	86
41	A164 / Hull Road	31	0	31
42	A164 / Lincoln Way	91	19	110
43	A165 / Maybury Road	14	32	46
44	A1079 / Highgate	16	0	16
45	Killingworldgraves / Walkington Heads	31	10	41
46	B1230 / Coppleflat Lane	25	0	25
47	Dunflat Road / Coppleflat Lane	10	11	21
48	B1248 / Miles Lane	9	5	14
49	B1248 / Rootas Lane	14	5	19
50	A164 / Station Road	14	9	23
51	A165 / A1035	2	5	7

Junction ID	Junction Description	Peak Hour Turning Counts for the Project		
		LV	HGV	Total
52	A164 / Ward Way / Zone 4 (AP49a / AP49b) Access	174	19	193
53	Coppleflat Lane / Zone 8 (AP42a / AP42b) Access	206	28	234
	Junctions with a predicted rise of 30 two-way construction peak hour movements.			

258. It was agreed with relevant stakeholders through the second meeting of ETG8 that junctions with a predicted increase of 30 or more two-way construction peak hour movements per junction would serve as a starting point for further discussions (**Volume 2, Appendix 26.1 Consultation Responses for Traffic and Transport**). The relevant highway authorities would review the turning counts presented in **Table 26-29** and use their local knowledge to identify any junctions where they believe the Project could adversely impact driver delay (capacity).

259. These junctions would be considered to be sensitive to changes in traffic and will be subject to a detailed capacity assessment within the ES.

260. Should potentially significant impacts be identified in the ES, additional mitigation measures would be proposed and included in the Outline CTMP submitted with the DCO application. It is preferred that any mitigation measures would focus upon 'traffic management' measures to reduce peak traffic movements, such as car-sharing, travel in site vehicles provided by the Principal Contractor(s), reprofiling deliveries, etc.

26.7.1.7 Impact on Driver Delay (Highway Geometry) (TT-C-06)

261. Driver delay impacts due to highway geometry are considered to have the potential for significant effects where the highway network within the Traffic and Transport Study Area has constrained width, preventing two vehicles from passing and potentially causing delays from waiting and manoeuvring. A review of all links has been undertaken (**Section 26.5.3.2.2**) to identify any links with a 'constrained width,' defined as a road less than 5.5m wide.

262. The proposed embedded mitigation measures (see **Table 26-6**, Commitment IDs CO64, CO69, CO72, CO73, CO75, CO76, CO77 and CO78) provide the predicted construction traffic forecasts, distributions and working practices which set the baseline for the assessment of driver delay (highway geometry).

26.7.1.7.1 Receptor Sensitivity and Impact Magnitude

263. **Table 26-30** provides a summary of the magnitude of Impact and sensitivity of the 14 links identified with a constrained width in the context of the changes in forecast daily traffic flows in 2029. Details of the changes in daily traffic flows have been extrapolated from **Table 26-20**. The impact upon all links is predicted to be of medium-term duration, continuous and fully reversible. It is predicted that the impact will affect the receptors directly.

Table 26-30 Magnitude of Driver Delay (Highway Geometry) Impact and Sensitivity of Receptors

Link ID	Link Description	Background Link Characteristics and Sensitivity	Impact Magnitude
56	Rootas Lane (east)	The Project's construction traffic would be required to travel approximately 0.24km along Rootas Lane (east) to AP27 and 0.31km to AP26 from B1248. Rootas Lane (east) is approximately 3m to 3.5m wide which would allow two LV to pass each slowly. The link currently has an annual average daily traffic flows of 97 total vehicles of which 3 are HV. The link is therefore assessed to be of high sensitivity.	Peak daily increase in LV trips on Link 56 would be 122 per day, equivalent to approximately 61 arrivals in the morning and 61 departures in the evening. Peak daily increase in HV trips on Link 56 would be 57 (equivalent to just less than five an hour), there is a baseline of 3 HV on Link 56, which would amount to a total of 60 HGV on Link 56. This would be equivalent to exactly 5 HV per hour. Considering the existing and forecast levels of HGV use the magnitude of impact is assessed as high.
57	Walkington Heads	The Project's construction traffic would be required to travel approximately 1.3km along Walkington Heads) to AP40 and AP41 from the junction with Coppleflat Lane. Walkington Heads is approximately 3m to 5.2m to 5.5m and currently allows two LV to pass each or an HV to pass an oncoming LV. The link currently accommodates 5,238 trips a day, of which 236 are HV. The link is therefore assessed to be of low sensitivity.	Peak daily increase in LV trips on Link 57 would be 59 per day, equivalent to approximately 30 arrivals in the morning and 30 departures in the evening. Peak daily increase in HV trips on Link 57 would be 117 (equivalent to 10 an hour), there is a baseline of 236 HV on Link 57 (equivalent to 20 an hour), which would amount to a total of 30 HGV on Link 57. This would be equivalent to 30 HV per hour. Considering the existing and forecast levels of HV use the magnitude of impact is assessed as medium.
64	Old Road (between A164 and Miles Lane)	The Project's construction traffic would have to travel approximately 0.46km from the Junction with the A164 to Miles Lane. Old Road (between A164 and Miles Lane) is approximately 5.35 at its narrowest point. As well as this, there are likely parked cars along the road with it being a residential area. Link 64 currently has an annual average daily traffic flows of 2,376 total vehicles of which 18 are HV. The link is therefore assessed to be of low sensitivity.	Peak daily increase in LV trips on Link 64 would be 12 per day, equivalent to approximately 6 arrivals in the morning and 6 departures in the evening. Peak daily increase in HV trips on Link 64 would be 0. Considering the existing and forecast levels of HV use the magnitude of impact is assessed as negligible.
67 and 68	Station Road / Aike Lane	The Project's' construction traffic would have to travel approximately 4.38km along the Station Road / Aike Lane to the furthest access point (AP17). Station Road / Aike Lane is approximately 2.4m to 3.3m wide. There are approximately four formalized passing places and eight unofficial passing places within Link 67, with a range in distance of between 175m to 350m between each location. Within Link 68 there is one formalized and one unofficial passing places with none provided within the southern section of Aike Village. The links currently has an annual average daily traffic flows of 214 total vehicles of which 20 are HV. The links are therefore assessed to be of high sensitivity	Peak daily increase in LV trips on Link 67 would be 95 per day, equivalent to approximately 48 arrivals in the morning and 48 departures in the evening. Peak daily increase in HV trips on Links 67 and 68 would be 85 (equivalent to seven an hour), there is a baseline of 20 HV on Links 67 and 68 (equivalent to up to 2 an hour), which would amount to a total of 105 HV on Links 67 and 68. This would be equivalent to nine HV per hour. Considering the existing and forecast levels of HV use, the magnitude of impact is assessed as high for both links.

Link ID	Link Description	Background Link Characteristics and Sensitivity	Impact Magnitude
69	Manor Farm Cottages	The Project's construction traffic would need to travel 40m down Manor Farm Cottages to get to AP46. Manor Farm Cottages is an agricultural vehicle only access only which is 4.3m wide at the restricted access throat widening to approximately 5.3m wide leading to AP46. This allows two LV to pass slowly. The access is to be amended as part of the Jock's Lodge Improvements Scheme and will convert into a left turn in / left turn out junction only. It is estimated that the link has an annual average daily traffic flows of 104 total vehicles of which 10 are HV. The link is therefore assessed to be of medium sensitivity.	Peak daily increase in LV trips on Link 69 would be 29 per day, equivalent to approximately 15 arrivals in the morning and 15 departures in the evening. Peak daily increase in HV trips on Link 69 would be 66 (equivalent to up to six an hour), there is an estimated baseline of 10 HV on Link 69 (equivalent to up to 1 an hour), which would amount to a total of 76 HV on Link 69. This would be equivalent to approximate seven HV per hour. Considering the existing and forecast levels of HV use the magnitude of impact is assessed as medium.
70	North Turnpike	The Project's construction traffic would be required to travel 0.9km down North Turnpike the B1242 to get to AP1. North Turnpike is approximately 3m wide which would not allow two LV to pass each other without utilising the grass verge. Link 70 is considered to be an emergency access link to the beach which would allow (if required) construction plant to travel south along the beach to gain access to the landfall location at the bottom of the cliff. It is estimated that the link has an annual average daily traffic flows of 30 total vehicles of which three are HV. The link is therefore assessed to be of medium sensitivity.	As link 70 is considered an emergency access link, no forecast LV or HV have been predicted to occur on a typical day. Considering the existing and forecast levels of HV use the magnitude of impact is assessed as negligible.
72	B1232 – North Frodingham	The Project's construction traffic would be required to travel approximately 3.1km along link 72 to AP11 and AP12 from the junction with the B1242 The B1242 is approximately 4.5m to 5.5m and currently allows two LV to pass each or an HV to pass an oncoming LV slowly. The link currently accommodates 1,688 trips a day, of which 61 are HV. The link is therefore assessed to be of medium sensitivity.	Peak daily increase in LV trips on Link 72 would be 92 per day, equivalent to approximately 46 arrivals in the morning and 46 departures in the evening. Peak daily increase in HV trips on Link 72 would be 185 (equivalent to 16 an hour), there is an estimated baseline of 61 HV on Link 72 (equivalent to five an hour), which would amount to a total of 246 HV on Link 73. This would be equivalent to approximate 21 HV per hour. Considering the existing and forecast levels of HV use the magnitude of impact is assessed as high.
73	Dunnington Lane	The Project's construction traffic would need to travel 0.43km down Dunnington Lane from the A165 entry to get to AP4 and AP5. Dunnington Lane is approximately 4.0m wide and allows two LV to pass slowly. There are approximately five formalised passing points, approximately every 220m apart. The link currently has an annual average daily traffic flows of 162 total vehicles of which 60 are HV. The link is therefore assessed to be of low sensitivity.	Peak daily increase in LV trips on Link 73 would be 61 per day, equivalent to approximately 31 arrivals in the morning and 31 departures in the evening. Peak daily increase in HV trips on Link 73 would be 124 (equivalent to 10 an hour), there is an estimated baseline of 60 HV on Link 73 (equivalent to up to five an hour), which would amount to a total of 184 HV on Link 73. This would be equivalent to approximate 16 HV per hour. Considering the existing and forecast levels of HV use the magnitude of impact is assessed as high.

Link ID	Link Description	Background Link Characteristics and Sensitivity	Impact Magnitude
79	Grange Road	The Project's construction traffic would be required to travel approximately 0.8km along Grange Road from the A165 junction to the furthest access AP8. Grange Road is approximately 4.19m at its narrowest point with three fomalised passing places. The link currently has an annual average daily traffic flows of 785 total vehicles of which 53 are HGV. The link is therefore assessed to be of low sensitivity.	Peak daily increase in LV trips on Link 79 would be 343 per day, equivalent to approximately 172 arrivals in the morning and 172 departures in the evening. Peak daily increase in HV trips on Link 79 would be 237 (equivalent to 20 an hour), there is an estimated baseline of 53 HV on Link 73 (equivalent to up to five an hour), which would amount to a total of 290 HV on Link 73. This would be equivalent to approximate 24 HV per hour. Considering the existing and forecast levels of HV use the magnitude of impact is assessed as high.
81	West Street – West of Leven	The Project's construction traffic would be required to travel 1km along West Street - West of Leven (left of Carr Lane) leading to AP12 and AP13. West Street - West of Leven is approximately 4.15m wide up to the junction with Heigholme Lane and currently allows two LV to pass each. West of the junction, West Street narrows to approximately 3.5m wide west of the junction which would allow two LV to pass each other slowly. The link currently has an annual average daily traffic flows of 205 total vehicles of which six are HV. The link is therefore assessed to be of medium sensitivity.	Peak daily increase in LV trips on Link 81 would be 23 per day, equivalent to approximately 13 arrivals in the morning and 13 departures in the evening. Peak daily increase in HV trips on Link 81 would be 56 (equivalent to five an hour), there is an estimated baseline of six HV on Link 81 (equivalent to up to five an hour), which would amount to a total of 63 HV on Link 81. This would be equivalent to approximate five HV per hour. Considering the existing and forecast levels of HV use the magnitude of impact is assessed as high.
85	Dunflat Road	The Project's construction traffic would be required to travel 130m along Dunflat Road leading to AP44 and AP45. Dunflat Road is approximately 3.5m wide up to the junction with Coppleflat Lane and currently allows two LV to pass each slowly. The link currently has an annual average daily traffic flows of 228 total vehicles of which 24 are HV. The link is therefore assessed to be of medium sensitivity.	Peak daily increase in LV trips on Link 85 would be 71 per day, equivalent to approximately 36 arrivals in the morning and 36 departures in the evening. Peak daily increase in HV trips on Link 85 would be 78 (equivalent to seven an hour), there is an estimated baseline of 24 H on Link 85 (equivalent to two an hour), which would amount to a total of 102 HVs on Link 85. This would be equivalent to approximate seven HV per hour. Considering the existing and forecast levels of HV use the magnitude of impact is assessed as medium.
99	Heigholme Lane	The Project's construction traffic would be required to travel 0.8km along Heigholme Lane leading to AP52. Heigholme Lane is approximately 3m wide and would not allow two LV to pass each other without utilising the grass verge. The link currently has an annual average daily traffic flows of 105 total vehicles of which seven are HV. The link is therefore assessed to be of high sensitivity.	Peak daily increase in LV trips on Link 81 would be 11 per day, equivalent to approximately 6 arrivals in the morning and 6 departures in the evening. Peak daily increase in HV trips on Link 99 would be 56 (equivalent to five an hour), there is an estimated baseline of seven HV on Link 99 (equivalent to five an hour), which would amount to a total of 63 HV on Link 81. This would be equivalent to approximate six HV per hour. Considering the existing and forecast levels of HV use the magnitude of impact is assessed as high.

Link ID	Link Description	Background Link Characteristics and Sensitivity	Impact Magnitude
100	Scorborough Lane	The Project's construction traffic would be required to travel 600m along Scorborough Lane from AP20 where construction traffic would join Scorborough Lane to AP18 where construction traffic would rejoin the onshore ECC. Scorborough Lane is approximately 3m wide and would not allow two LV to pass each other without utilising the grass verge. The link currently has an annual average daily traffic flows of 52 total vehicles of which 3 are HV. The link is therefore assessed to be of high sensitivity.	Peak daily increase in LV trips on Link 100 would be 199 per day, equivalent to approximately 100 arrivals in the morning and 100 departures in the evening. Peak daily increase in HV trips on Link 99 would be 75 (equivalent to seven an hour), there is an estimated baseline of three HV on Link 100 which would amount to a total of 78 HV on Link 81. This would be equivalent to approximate seven HV per hour. Considering the existing and forecast levels of HV use the magnitude of impact is assessed as high.

26.7.1.7.2 Effect Significance

264. **Table 26-31** provides a summary of the sensitivity of each receptor, the magnitude of impact and an evaluation of the significance of the driver delay (highway geometry) effect.

Table 26-31 Summary of Driver Delay (Highway Geometry) Significance Effects

Links	Magnitude of Driver Delay (Highway Geometry)	Sensitivity	Significance of Effect	Significant in EIA Terms
64	Negligible	Low	Negligible	Not significant
70		Medium	Minor Adverse	Not significant
57	Medium	Low	Minor Adverse	Not significant
69, 85		Medium	Moderate Adverse	Significant
72		High	Major Adverse	Significant
73, 79	High	Low	Moderate Adverse	Significant
81		Medium	Major Adverse	Significant
56, 67, 68, 99, 100		High	Major Adverse	Significant

26.7.1.7.3 Additional Mitigation and Residual Effect

265. **Table 26-31** identifies that the Project's construction traffic could result in potentially significant driver delay (highway geometry) effect upon the users of Links 56, 67, 68, 69, 72, 73, 79, 81, 85, 99 and 100 associated with the forecast increases in HV Traffic.

266. **Table 26-32** details mitigation measures that would be applied to reduce the potentially significant adverse driver delay (highway geometry) effects. Mitigation measures are broadly divided into 'hard' engineering (e.g. passing places or carriageway widening) or where feasible, traffic management via traffic lights or the use of escort vehicles to intercept oncoming traffic and call through the HV to safely reach a destination point without conflict. Safety at Street Works and Roadworks, A Code of Practice (Department of Transport, 2014) contains 'Stop Works' or 'Temporary Obstruction' traffic control provisions and legally permits vehicular traffic to be stopped (subject to conditions being met) for two minutes and 15 minutes respectively.

267. The measures outlined in **Table 26-32** are intended to provide an indicative and proportionate means of mitigating the proposed effects. These measures will be agreed with the relevant highway authorities through the development of the Outline CTMP and included in the Outline CTMP submitted with the DCO application. Further refinement will be undertaken following the appointment of the Principal Contractor(s) and the refinement of the worst-case traffic and transport assumptions and will be included within the CTMP developed post-consent and prior to commencement of the relevant stage of construction works.

268. Additional hard engineering and traffic management vehicle mitigation measures are outlined within the draft version of the **Outline Construction Traffic Management Plan** (document reference 8.15) (see **Table 26-35**, Commitment ID CO73) and will be further refined at ES stage.

Table 26-32 Potential Additional Mitigation Measures for Driver Delay (Highway Geometry)

Link(s)	Potential Additional Mitigation Measures
56	Link 56 is identified to be wide enough to allow two LV to pass each slowly but would not be wide enough for to allow two HV to pass. To accommodate the forecast increase in HV traffic, it would be proposed to provide a minimum of two passing places along the 300m length required to traverse or an escort vehicle would be used to guide HV along the link and hold back conflicting HGV traffic.
67 and 68	The links identified are not wide enough for two vehicles to pass each, however five formalized and nine unofficial passing places are provided to allow the passing of LV but would not allow HV to pass at all sections. To accommodate the additional HV traffic, the unofficial passing places would be formalized and widened, and the formalized passing places would be extended to cater for HV.
69	The link identified is restricted to agricultural vehicle access only and leads to the Manor Farm Cottages and further field accesses. The junction forms part of the Jock's Lodge Junction Improvements Scheme . The link width will be constrained (4.5m) at the mouth of the junction which will restrict the passing of two HV at the same time. To accommodate the additional HV traffic, traffic management plans will include the timed arrivals of HGV and timed departures of vehicles leaving AP46. These traffic management plans will reduce the risk of HGV conflicts occurring at the junction with the A164 and will not require additional hard engineering methods of mitigation.
72	The B1242 is approximately 4.5m to 5.5m and currently allows two LV to pass each or an HV to pass an oncoming LV slowly. Certain sections of the link will not allow for two HV to pass each other. A combination of escort vehicles, traffic lights and carriageway widening would be required to facilitate the use of Link 72 to allow two HVs to pass each other at constrained sections of the link. There would be a requirement to utilise three-way traffic lights during periods of construction activity at the junction between the B1249 (Link 71) and Cross Lane (Link 72). This would allow HV traffic to negotiate the junction unopposed and remove the requirement for any hard engineering works. Further assessment of Link 72 geometry constraints will be undertaken in consultation with ERYC post-PEIR. From these assessments, a comprehensive mitigation plan will be agreed with ERYC and included within the Outline CTMP (see **Table 26-35**, Commitment ID CO73) to be provided with the DCO application submission.
73	The link is identified to be wide enough to allow two LV to pass and has existing passing places to allow a limited number of HGV to pass. The increase in HGV traffic however could result in conflict between HGV if the passing places are blocked by existing HGV movements. To accommodate the forecast increase in HGV traffic, it would be proposed to extend the existing passing places to provide additional space for HGV to wait.
79	The link is identified to be wide enough to allow two LV to pass and has existing passing places to allow a limited number of HGV to pass. The increase in HGV traffic however could result in conflict between HGV if the passing places are blocked by existing HGV movements. To accommodate the forecast increase in HGV traffic, it would be proposed to extend the existing passing places to provide additional space for HGV to wait.
81	West Street - West of Leven is approximately 4.15m wide up to the junction with Heigholme Lane and currently allows two LV to pass each. West of the junction, West Street narrows to approximately 3.5m wide west of the junction which would allow two LV to pass each other slowly. Works to West Street are proposed as part of the Peartree Hill Solar Farm PEIR (RWE, 2024) and includes three passing places (to 7.5m carriageway width) along West Street with potential footway diversion within Leven. Should planning permission be granted for the Solar Farm and temporary improvements be implemented, the road would be able to accommodate the Project's construction traffic and no additional mitigation measures would be required. Consultation between Peartree Hill Solar Farm and the Project post-PEIR would be undertaken in conjunction with ERYC to cover the following scenarios to enable the use of any proposed temporary mitigation measures: • Peartree Hill Solar Farm is refused planning permission and temporary mitigation measures are refused. The Project would propose additional carriageway widening, passing places or an escort vehicle would be used to guide HGV along the link and hold back conflicting HGV traffic. • Peartree Hill Solar Farm gains planning permission, the temporary mitigation measures are approved, constructed and the Solar Farm has completed ahead of the Project potentially starting construction.

Link(s)	Potential Additional Mitigation Measures
	• Peartree Hill Solar Farm gains planning permission, the temporary mitigation measures are approved, constructed and the Solar Farm is constructed at the same time as the Project potentially begins construction. To accommodate the forecast HGV traffic west of the junction with Heigholme Lane, the road would be widened, passing places provided or an escort vehicle would be used to guide HGV along the link and hold back conflicting HGV traffic.
85	The link is approximately 140m long and is identified to be wide enough to allow two LV to pass each slowly but would not be wide enough to allow two HV to pass. To accommodate the additional HGV traffic, localised road widening would be provided along the link to allow two HGV to pass, or alternatively an escort vehicle would be used to guide HGV along the link and hold back conflicting HGV traffic.
99	Works to Heigholme Lane are proposed as part of the Peartree Hill Solar Farm PEIR (RWE, 2024) and includes two passing places (to 7.5m carriageway width), vegetation clearance and junction improvements with the Low Baswick Farm Access. Should planning permission be granted for the Solar Farm and temporary improvements be implemented, the road would be able to accommodate the Project's' construction traffic and no additional mitigation measures would be required. Consultation between Peartree Hill Solar Farm and the Project post-PEIR would be undertaken in conjunction with ERYC to cover the following scenarios to enable the use of any proposed temporary mitigation measures: • Peartree Hill Solar Farm is refused planning permission and temporary mitigation measures are refused. The Project would propose additional carriageway widening, passing places or an escort vehicle would be used to guide HGV along the link and hold back conflicting HGV traffic. • Peartree Hill Solar Farm gains planning permission, the temporary mitigation measures are approved, constructed and the Solar Farm has completed ahead of the Project potentially starting construction. • Peartree Hill Solar Farm gains planning permission, the temporary mitigation measures are approved, constructed and the solar farm is constructed at the same time as the Project potentially begins construction.
100	Scorborough Lane is approximately 3m wide and would not allow two LV to pass each other without utilising the grass verges. To accommodate the forecast increase in LV and HGV construction traffic, it would be proposed to provide traffic management proposals rather than hard engineering methods to control traffic. Traffic management proposals could include a traffic lights systems to control the flow of construction traffic onto and along Scorborough lane to / from AP18, AP19 and AP20 allowing unopposed movement of vehicles.

269. With the adoption of additional mitigation measures, the magnitude of impact would be **low.** The residual effect is therefore of **minor adverse** significance, which is **not significant** in EIA terms.

26.7.1.8 Impact on Driver Delay (Road Closures) (TT-C-07)

270. During the onshore export cable installation works along the onshore ECC, there is the potential for export cables to be installed across six minor public roads using open cut trenching techniques. To provide a safe working area for the installation, it would be proposed to close these roads for a short period of time (up to two weeks).

271. Access through the closures would be maintained for pedestrians and cyclists at all times.

272. The proposed embedded mitigation measures (see **Table 26-6,** Commitment IDs CO64, CO69, CO72, CO73, CO75, CO76, CO77 and CO78) provide the predicted construction traffic forecasts, distributions and working practices which set the baseline for the assessment of driver delay (road closures).

26.7.1.8.1 Receptor Sensitivity and Impact Magnitude

273. **Table 26-33** provides a summary of the magnitude of impact and sensitivity of all open-cut onshore cable crossings required during the onshore export cable installation works. The locations of the proposed road crossings are highlighted on **Figure 26-2**.

274. In assessing the sensitivity and magnitude of impact, consideration has been given to the volume of traffic (see **Volume 2, Appendix 26.2 Transport Assessment**), the additional delay drivers would experience if a road were closed or access restricted, and also, whether the road crossing impacts scheduled bus services. The impact on all links is predicted to be of medium-term duration, continuous and fully reversible. It is predicted that the impact will affect the receptors directly.

Table 26-33 Magnitude of Driver Delay (Road Closures) Impact and Sensitive Receptors

Crossing Location	Daily Traffic Flows	Bus Route	Sensitivity	Alternative Diversion Route	Impact Magnitude	Rationale
Bewholme Lane	<500*	No	Bewholme Lane has relatively few receptors along it and is a narrow road, with no cycle lanes, footway or scheduled bus services. This link is therefore assessed as of low sensitivity.	Traffic could be diverted to the A165 and Skipsea Road (Beeford Road) which is of a higher classification and could therefore be expected to accommodate an increase in traffic. This diversion would result in an additional two minutes of journey time.	**Low**	A suitable alternative route exists which would add up to two minutes additional journey time.
Dunnington Lane	<500*	No	Dunnington Lane is a narrow, single-tracked road which would potentially have a low traffic flow. It has no footway, cycle lanes or scheduled bus service. The link is therefore assessed as of low sensitivity.	Traffic could be diverted to the B1249 and A165 which are of a higher classification and could therefore be expected to accommodate an increase in traffic. This diversion would result in an additional two minutes of journey time.	**Low**	A suitable alternative route exists which would add up to two minutes additional journey time.
Burshill Carr Road	<500*	No	Burshill Carr Road is a single-tracked road which leads to a dead end would likely have low traffic flow. There are no footways, cycle lanes or scheduled bus services. The road serves a number of small properties. The link is therefore assessed as of low sensitivity.	No suitable diversion via the highway network exists, therefore a closure of the road would prevent access to the properties and farms served by this road.	**High**	No suitable diversion route exists.
Rootas Lane (East)	97	No	Rootas Lane is a narrow, single-tracked road with potential low traffic flow. It has no footway, cycle lanes or scheduled bus services. The link is therefore assessed as of low sensitivity.	Traffic could be diverted to the B1248 and Miles Lane which are of equal or higher classification and could therefore be able to be expected to accommodate an increase in traffic. The diversion would result in an extra two minutes of journey time.	**Low**	A suitable alternative route exists which would add up to two minutes additional journey time.

Crossing Location	Daily Traffic Flows	Bus Route	Sensitivity	Alternative Diversion Route	Impact Magnitude	Rationale
Middlehowe Road	<500*	No	Middlehowe Road is a narrow, single-track road with low traffic flow. It lacks footways, cycle lanes, and scheduled bus services. Consequently, the link is assessed as having low sensitivity.	Traffic could be diverted to the B1230 which is of higher classification, and Northgate and Wold Road which are of similar classification to Middlehowe Road and could therefore be likely to accommodate an increase in traffic. The diversion would result in an extra 3 minutes of journey time.	**Low**	A suitable alternative route exists which would add up to three minutes additional journey time.
Dunflat Road	228	No	Dunflat Road is a slightly narrow, single-track road with low traffic flow. It lacks footways, cycle lanes, and scheduled bus services. The link is therefore assessed as of low sensitivity.	Traffic could be diverted to the A164, Main Street / Little Weighton Road and back on to Dunflat Road which are of higher classification and therefore would be able to accommodate an increase in traffic. The diversion adds 10 minutes to the journey.	**High**	A suitable alternative route exists which would add up to 10 minutes additional journey time.

26.7.1.8.2 Effect Significance

275. **Table 26-34** provides a summary of the sensitivity of each receptor, the magnitude of impact, an evaluation of the significance of the driver delay (road closures) effect and if it is significant in EIA terms.

Table 26-34 Summary of Driver Delay (Road Closures) Significance

Crossing Location	Magnitude of Impact	Sensitivity	Significance of Effect	Significant in EIA Terms
Bewholme Lane	Low	Low	Minor Adverse	Not significant
Dunnington Lane	Low	Low	Minor Adverse	Not significant
Burshill Carr Road	High	Low	Moderate Adverse	Significant
Rootas Lane	Low	Low	Minor Adverse	Not significant
Middlehowe Road	Low	Low	Minor Adverse	Not significant
Dunflat Road	High	Low	Moderate Adverse	Significant

26.7.1.8.3 Additional Mitigation and Residual Effect

276. **Table 26-34** identifies that the temporary closure of Burshill Carr Road and Middlehowe Road to install the Project's onshore export cables could result in potentially significant driver delay (road closures) effects upon the users of these links.

277. The Applicant will undertake further site investigation works to establish the potential to use trenchless installation techniques at these locations. If trenchless installation techniques cannot be used at these locations, the following mitigation measures are proposed:

- Temporarily widening the road to carry out the works in two stages, thereby keeping one lane open for traffic, with traffic controlled via signal control;
- Working with ERYC and local stakeholders to agree an appropriate time to undertake the works to minimise disruption (e.g. during school holidays);
- Implementation of signing placed ahead of the location to assist drivers in finding alternative routes; and
- Ensuring all road closure works are staggered to minimise any cumulative effects within close geographical areas.

278. These additional mitigation measures are outlined within the draft version of the **Outline Construction Traffic Management Plan** (document reference 8.15) (see **Table 26-35**, Commitment ID CO73) which will be further refined at ES stage.

279. With the adoption of additional mitigation measures, the magnitude of impact would be **low**. The residual effect is therefore of **minor adverse** significance, which is **not significant** in EIA terms.

26.7.1.9 Onshore Impacts of Traffic Associated with Offshore Construction Activities and Any Cumulative Effects (TT-C-10)

280. The Planning Inspectorate did not agree to scope this matter out from the assessment during construction. The Planning Inspectorate stated that the ES should include an assessment of these matters, or evidence demonstrating agreement with the relevant consultation bodies and the absence of likely significant effects.

281. Given that the offshore construction base port(s) is not currently known, and in the absence of the anticipated type and number of road vehicle movements, potential impacts are not fully understood and have not been assessed.

282. At the second ETG8 meeting held on 30th September 2024 (see **Volume 2, Appendix 26.1 Consultation Responses for Traffic and Transport**), it was agreed with relevant stakeholders that a PAMP (see **Table 26-6**, Commitment ID CO102), which will be secured by a DCO requirement, will be developed post-consent (if required) once the location(s) of the preferred offshore construction base port(s) is confirmed and agreed with the relevant authorities prior to the commencement of construction.

283. The PAMP will provide an assessment of the traffic movements due to port operations associated with offshore construction activities and detail mitigation measures as required to avoid significant effects, and therefore these impacts are not assessed further in this chapter.

26.7.2 Potential Effects during Operation

26.7.2.1 Operational Scope

284. Routine non-intrusive inspection works at the landfall is anticipated to consist of a visit to the Transition Joint Bay (TJB) and associated underground link box every six months for cable joint inspection and monitoring. Personnel access would be taken from the manhole cover installed on top of the link box. As the haul road will not be in place during operation, suitable off-road vehicles will be used for access.

285. Maintenance of landfall infrastructure during operation is expected to be minimal. Unplanned emergency maintenance works to address faults will be undertaken as and when necessary and, depending on the nature of the repair, may involve intrusive works such as excavation of the TJB and removal and replacement of the faulty equipment with spare parts.

286. Onshore export cables will be remotely monitored to ensure good performance and determine the requirements for corrective maintenance. Routine non-intrusive inspection works is anticipated to consist of a visit to each jointing bay and associated link box location every six months for cable joint inspection and monitoring. Periodic testing of onshore export cables is likely to be required every six months, which would be undertaken at defined inspection points along the onshore ECC.

287. Personnel access would be undertaken either from the manhole cover installed on top of underground link boxes or via the installed kiosk for above-ground link boxes. As the haul road will not be in place during operation, access to the relevant sections of the onshore export cables and jointing bay locations will be gained using existing field accesses or other suitable accesses from the public highway.

288. Maintenance of the onshore export cables during operation is expected to be minimal. Unplanned emergency maintenance works to address faults would be undertaken as required, and depending on the nature of the repair, may involve intrusive works such as the excavation of two adjacent jointing bays, removal of the faulty cables and installation of replacement spare cables into the cable ducts. Alternatively, the length of faulty cables may be excavated and replaced with spare cables, and two new jointing bays installed within the affected area.

289. The OCS and ESBI will be unmanned with no permanent on-site personnel presence and will be capable of operating 24 hours a day and year-round. Monitoring of the OCS and ESBI will be undertaken using remote monitoring equipment to ensure good performance and determine the requirements for corrective maintenance. Site security will be provided using perimeter fencing and CCTV technology.

290. Routine inspections of the OCS and ESBI during operation is anticipated to consist of a monthly visit to the OCS and ESBI for a duration of a few days.

291. Routine non-outage maintenance works of the OCS and ESBI are anticipated to consist of four annual visits to the OCS and ESBI for a duration of one week, with outage maintenance works scheduled once every third year. End of life replacement of components associated with the OCS and ESBI will be undertaken as required, the frequency of which will vary depending on the design life of each component.

292. Unplanned emergency maintenance works to address faults or redundancy loss will be undertaken as and when necessary, and depending on the nature of the repair, may involve deinstallation of faulty electrical equipment and installation of replacement spare parts.

293. The ESBI will require the battery units to be replaced on a 10 to 15 year cycle depending on use. It is estimated that a worst-case scenario that all battery units would need replacing. **Chapter 4 Project Description** details that there could be up to 50 battery blocks (each block could contain up to 24 battery units). Thus, a total of 1,200 battery units could require replacing during the 5 year replacement window.

294. For a worst-case scenario, it is assumed that all 1,200 battery units would need to be replaced within a one year period at the end of the anticipated 10 to 15 year lifecycle. It is assumed that three battery units can be transported per HGV. This would result in a total of 400 potentially hazardous load deliveries (and a total of 800 two-way movements). This would equate to up-to four HGV movements per day over 260 working days.

295. Other onshore infrastructure components may require replacement / repair events over the O&M phase. However, these requirements are more infrequent and subject to lower vehicle demand, therefore the replacement of battery units for the ESBI represents the realistic worst-case scenario for traffic and transport effects during the O&M phase, and the only onshore infrastructure component that requires consideration with respect to hazardous loads.

296. Considering the O&M activities described above and further detailed in **Chapter 4 Project Description**, no significant traffic and transport effects are anticipated during the O&M phase and as agreed with the relevant highway authorities through the second ETG meeting (detailed in **Volume 2, Appendix 26.1 Consultation Responses for Traffic and Transport**). Thus, apart from the road safety and hazardous loads assessment, no other operational impacts will be assessed within this traffic and transport impact assessment.

26.7.2.2 Impact on Road Safety (Hazardous Loads Only) (TT-O-04)

297. The EATM details that it is generally accepted that day to day variation of traffic on a road is frequently at least + or -10%. Therefore, at a basic level, it should be assumed that projected changes in traffic of less than 10% create no discernible environmental impact.

298. Thus, the identified level of two peak daily HGV potentially hazardous load deliveries (four total movements per day) detailed in **Section 26.7.2** would equate to a **negligible** impact magnitude. Thus, on **high** sensitivity receptors, the worst-case scenario would be **minor adverse** significance, which is **not significant** in EIA terms.

26.7.2.3 Onshore Impacts of Traffic Associated with Offshore Operational Activities and Any Cumulative Effects (TT-O-10)

299. The Planning Inspectorate did not agree to scope this matter out from the assessment during operation. The Planning Inspectorate stated that the ES should include an assessment of these matters, or evidence demonstrating agreement with the relevant consultation bodies and the absence of likely significant effects.

300. Given that the O&M base port is not currently known, and in the absence of the anticipated type and number of road vehicle movements, potential impacts are not fully understood and have not been assessed.

301. At the second ETG8 meeting held on 30th September 2024 (see **Volume 2, Appendix 26.1 Consultation Responses for Traffic and Transport**), it was agreed with relevant stakeholders that a PAMP (see **Table 26-6**, Commitment ID CO102), which will be secured by a DCO requirement, will be developed post-consent (if required) once the location(s) of the preferred O&M base port is confirmed and agreed with the relevant authorities prior to the commencement of operation.

302. The PAMP will provide an assessment of the traffic movements due to port operations associated with offshore O&M activities and detail mitigation measures as required to avoid significant effects, and therefore these impacts are not assessed further in this chapter.

26.7.3 Potential Effects during Decommissioning

26.7.3.1 Impacts on Severance, Amenity, Fear and Intimidation, Road Safety (Including Hazardous Loads), Driver Delay (Capacity, Highway Geometry and Road Closures), Abnormal Loads and Onshore Impacts of Traffic Associated with Offshore Decommissioning Activities (TT-D-01, TT-D-02, TT-D-03, TT-D-04, TT-D-05, TT-D-06, TT-D-07, TT-D-08 and TT-D-10)

303. No decision has been made regarding the final decommissioning strategy for the onshore infrastructure, as it is recognised that regulatory requirements and industry best practice change over time.

304. Commitment ID CO56 (see **Table 26-6**) requires an Onshore Decommissioning Plan to be prepared and agreed with the relevant authorities prior to the commencement of onshore decommissioning works. This will ensure that decommissioning impacts with respect to traffic and transport will be assessed in accordance with the applicable regulations and guidance at that time of decommissioning where relevant, with appropriate mitigation implemented as necessary to avoid significant effects.

305. The detailed activities and methodology for decommissioning will be determined later within the Project's lifetime, but would be expected to include:

- Deinstallation and removal of electrical equipment, buildings and other infrastructure for the OCS and ESBI;
- Removal of above-ground link boxes along the onshore ECC;
- Inspection of underground infrastructure to be left in-situ along the onshore ECC and at the landfall (i.e. TJB, jointing bays, underground link boxes, onshore export cables and ducting) to ensure they are safe to remain in place. If considered unsuitable to be left in-situ at the time of decommissioning, these components will be removed; and
- Site reinstatement and landscaping.

306. Whilst a detailed assessment of decommissioning impacts cannot be undertaken at this stage, for this assessment, it is assumed that decommissioning is likely to operate within the parameters identified for construction (i.e. any activities are likely to occur within the temporary construction working areas and require no greater amount or duration of activity than assessed for construction). The decommissioning sequence will generally be the reverse of the construction sequence. It is therefore assumed that decommissioning impacts would likely be of similar nature to, and no worse than, those identified during the construction phase.

307. At the second ETG8 meeting on 30th September 2024 (see **Volume 2, Appendix 26.1 Consultation Responses for Traffic and Transport**), it was agreed with the relevant stakeholders that decommissioning effects will be addressed through a DCO requirement for an Onshore Decommissioning Plan (see **Table 26-6**, Commitment ID CO56).

26.7.4 Additional Mitigation Measures

308. A draft version of the **Outline Construction Traffic Management Plan** (document reference 8.15) has been provided at PEIR stage for consultation and will be updated at ES stage and submitted with the DCO application. The Outline CTMP will detail measures relevant to traffic and transport that will be secured in the plan. Indicative additional mitigation measures which are included in the Outline CTMP are set out in **Table 26-35**.

309. Additional mitigation measures in the Outline CTMP have been identified by the EIA process to reduce likely significant adverse effects to acceptable levels. These additional mitigation measures include:

- Measures to reduce HGV and LV movements on the highway network to reduce the potential impacts on local communities (pedestrians, cyclists and equestrians);
- Measures to mitigate potential hazardous loads movements with respect to battery units on sensitive links;
- Measure to mitigate identified pattern of collisions; and
- Measures to allow the movement of public traffic through potential road closures reducing delays to other road users.

310. **Table 26-36** details indicative additional mitigation measures which are proposed to be included in the Outline CTMP at ES stage, following further development of the Project's access strategy and refinements to the project design and construction parameters.

311. Full details of all commitments made by the Project are provided within **Volume 2, Appendix 6.3 Commitments Register**.

Table 26-35 Indicative Additional Mitigation Measures Included in the Outline Construction Traffic Management Plan

Outline CTMP: Additional Mitigation Measures for Traffic and Transport
Control of HGV Routes The Project's Heavy Good Vehicles (HGV) construction traffic accessing the site via construction accesses AP2 and AP3 will not be routed from the south via Atwick and Hornsea (Commitment ID CO111).
Cable Crossings Currently, it is likely that four roads (i.e. Bewholme Lane, Dunnington Lane, Rootas Lane and Dunflat Road) will need to be temporarily closed to vehicular traffic for approximately a two to four week period during open-cut trenching works. To minimise disruption to existing road users, the following measures are proposed: • A safe route will be maintained for pedestrians and cyclists through the works area; • Implementation of advanced signing to assist drivers in finding alternative routes; • The closures will be staggered to ensure that nearby roads are not closed at the same time to ensure alternative diversions exist; and • The TMCo and CLO will engage with affected local communities and stakeholders to provide advance notification and identify any periods which could be avoided. Currently, an alternative traffic management strategy is likely to be needed for Burshill Carr Lane and Middlehow Road where access would be maintained either through the use of trenchless installation techniques (subject to further site investigation works) or shuttle working (e.g. the use of traffic signals to alternate flows on a one-way section of road). If trenchless installation techniques cannot be used at Burshill Carr Lane or Middlehow Road, the following additional mitigation measures in addition to the use of shuttle working are also proposed: • Temporarily widening of the road to allow the works to be undertaken in two stages, thereby maintaining one lane for traffic, with traffic controlled via signal control; • Working with East Riding of Yorkshire Council and local stakeholders to agree an appropriate time to undertake the works (e.g. during school holidays); and • Ensuring all road closure works are staggered to minimise disruption within close geographical areas.
Road Safety Noting the temporary nature of the Project's construction phase, it is proposed that mitigation measures would focus upon demand management measures, rather than physical highway improvements. Measures could include: • Limiting the numbers of peak vehicle movements via these links; • Restricting hours during which traffic travels via these links, i.e. to avoid particularly sensitive hours (e.g. school start and finish times); and / or • Enhanced driver inductions and training to make drivers aware of the risks at these locations; • Restricting the routes utilising Links 31, 38 and 39 from transporting potentially hazardous loads associated with ESBI; and • Link 52 to include a speed limit reduction from 60mph to 40mph in the vicinity of the proposed OCS Zone 8 access (AP42). This speed limit reduction will cover the bend south of the access where there has been a pattern of frequent loss- of-control collisions south of the access.

Table 26-36 Indicative Additional Mitigation Measures to Be Included in the Outline Construction Traffic Management Plan

Outline CTMP: Additional Mitigation Measures for Traffic and Transport
Optimising Peak Daily HGV Movements (to be further developed and included at ES stage) Preferred mitigation measures to optimise peak daily HGV movements (rather than intrusive highway interventions) include: • Stockpiling of materials to reduce peak daily HGV demand;

Outline CTMP: Additional Mitigation Measures for Traffic and Transport

- Backhauling, i.e. using laden vehicles to import stone and export excavated material;
- Use of local supply chain, to reduce the number of new HGV trips entering the Traffic and Transport Study Area;
- Optimising the size of HGV to reduce the total number;
- Re-alignment of critical construction activities to reduce the overlap of deliveries for peak construction;
- Working with the appointed Principal Contractor(s) to seek engineering refinements to reduce material quantities and therefore HGV numbers; and

The reuse of materials onsite to reduce offsite HGV trips, e.g. using excavated materials to form bunds, etc.

Access Management Measures (to be further developed and included at ES stage)

- To accommodate the forecast increase in HGV traffic on Link 56 it would be proposed to provide a minimum of two passing places along the 300m length required to traverse or an escort vehicle would be used to guide HGV along the link and hold back conflicting HGV traffic.
- To accommodate the additional HGV traffic along Links 67 and 68, the unofficial passing places would be formalised and widened, and the formalised passing places would be extended to cater for HV.
- To accommodate the additional HGV traffic on Link 69, traffic management plans will include the timed arrivals of HGV and timed departures of vehicles leaving AP46. These traffic management plans will reduce the risk of HV conflicts occurring at the junction with the A164 and will not require additional hard engineering methods of mitigation.
- A combination of escort vehicles, traffic lights and carriageway widening would be required to facilitate the use of Link 72 to allow two HV to pass each other at constrained sections of the link.
- There would be a requirement to utilise three-way traffic lights during periods of construction activity at the junction between the B1249 (Link 71) and Cross Lane (Link 72). This would allow HV traffic to negotiate the junction unopposed and remove the requirement for any hard engineering works. Further assessment of Link 72 geometry constraints will be undertaken in consultation with ERYC post-PEIR. From these assessments, a comprehensive mitigation plan will be agreed with ERYC ahead of the DCO application submission.
- To accommodate the forecast increase in HGV traffic along Link 73 it would be proposed to extend the existing passing places to provide additional space for HGV to wait.
- To accommodate the forecast increase in HGV traffic along Link 79 it would be proposed to extend the existing passing places to provide additional space for HGV to wait.
- Should planning permission be granted for the Peartree Hill Solar Farm and temporary improvements be implemented, the road would be able to accommodate the Project's construction traffic and no additional mitigation measures would be required. Consultation between Peartree Hill Solar Farm and the Project post-PEIR would be undertaken in conjunction with ERYC to cover the following scenarios to enable the use of any proposed temporary mitigation measures:
    - Peartree Hill Solar Farm is refused planning permission and temporary mitigation measures are refused. The Project would propose additional carriageway widening, passing places or an escort vehicle would be used to guide HGV along the link and hold back conflicting HGV traffic.

Outline CTMP: Additional Mitigation Measures for Traffic and Transport

    - Peartree Hill Solar Farm gains planning permission, the temporary mitigation measures are approved, constructed and the Solar Farm has completed ahead of the Project potentially starting construction.
    - Peartree Hill Solar Farm gains planning permission, the temporary mitigation measures are approved, constructed and the Solar Farm is constructed at the same time as the Project potentially begins construction.
- To accommodate the forecast HGV traffic west of the junction with Heigholme Lane, the road would be widened, passing places provided or an escort vehicle would be used to guide HGV along the link and hold back conflicting HGV traffic.
- To accommodate the additional HGV traffic along Link 86, localised road widening would be provided along the link to allow two HGV to pass, or alternatively an escort vehicle would be used to guide HGV along the link and hold back conflicting HGV traffic.
- To accommodate the forecast increase in LV and HGV construction traffic along Link 100, it would be proposed to provide traffic management proposals rather than hard engineering methods to control traffic.
- Traffic management proposals could include a traffic lights systems to control the flow of construction traffic onto and along Scorborough lane to / from AP18, AP19 and AP20 allowing unopposed movement of vehicles.

26.8 Preliminary Cumulative Effects

312. Cumulative effects are the result of the impacts of the Project acting in combination with the impacts of other proposed and reasonably foreseeable developments on receptors. This includes plans and projects that are not inherently considered as part of the current baseline.

313. The overarching framework used to identify and assess cumulative effects is set out in **Chapter 6 Environmental Impact Assessment Methodology** and **Volume 2, Appendix 6.5 Cumulative Effects Screening Report - Onshore** provides further details on the general framework and approach to the CEA. The four-stage approach is based upon the Planning Inspectorate Advice Note Seventeen: Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment (PINS, 2024). The fourth stage of the process is the assessment stage, which is detailed within the sections below for potential cumulative effects on traffic and transport receptors.

26.8.1 Initial Screening for Potential Cumulative Effects

314. The first step of the CEA identifies which impacts associated with the Project alone, as assessed under **Section 26.7**, have the potential to interact with other plans and projects to give rise to cumulative effects. All potential cumulative effects to be taken forward in the CEA are detailed in **Table 26-37** with a rationale for screening in or out. Only impacts determined to have a residual effect of negligible or greater are included in the CEA. Where an assessment of effects has been scoped out, these impacts are excluded, as there is no potential for them to contribute to a cumulative effect.

Table 26-37 Traffic and Transport – Potential Cumulative Effects

Impact ID	Impact and Project Activity	Potential for Cumulative Effects	Rationale
Construction			
TT-C-01	Severance – road vehicle movements associated with onshore construction activities.	Yes	Plans and projects currently in planning have potential to have cumulative effects on links within the Traffic and Transport Study Area.
TT-C-02	Amenity – road vehicle movements associated with onshore construction activities.	Yes	
TT-C-03	Fear and intimidation – road vehicle movements associated with onshore construction activities.	Yes	
TT-C-04	Road safety (including hazardous loads) – road vehicle movements and transport of hazardous materials associated with onshore construction activities.	Yes	
TT-C-05	Driver delay (capacity) – road vehicle movements associated with onshore construction activities.	Yes	Plans and projects currently in planning have potential to have cumulative effects on upon all roads within the Traffic and Transport Study Area.
TT-C-06	Driver delay (highway geometry) – road vehicle movements associated with onshore construction activities.	Yes	Plans and projects currently in planning have potential to have cumulative effects on links within the Traffic and Transport Study Area.
TT-C-07	Driver delay (road closures) – road vehicle movements associated with onshore construction activities.	Yes	
TT-C-08	Abnormal loads – road vehicle movements and transport of abnormal loads associated with onshore construction activities.	No	Cumulative effects are not anticipated as all abnormal loads will be undertaken, assessed and managed through the ESDAL process.

Impact ID	Impact and Project Activity	Potential for Cumulative Effects	Rationale
TT-C-10	Onshore impacts of traffic associated with offshore construction activities and any cumulative effects - road vehicle movements associated with deliveries and personnel transport to/from ports to enable offshore construction works	No	Given that the offshore construction base port(s) is not currently known, and in the absence of the anticipated type and number of road vehicle movements, potential impacts are not fully understood. Traffic impacts associated with operations of the offshore construction base port(s) for the Project, including cumulative effects, will be addressed through a DCO requirement for a PAMP (if determined to be required post-consent) (see **Table 26-6**, Commitment ID CO102)
Operation and Maintenance			
TT-O-04	Road safety (hazardous Loads only) - road vehicle movements and transport of hazardous loads associated with replacement of ESBI components.	No	The EATM details that it is generally accepted that day to day variation of traffic on a road is frequently at least + or -10%. Therefore, at a basic level, it should be assumed that projected changes in traffic of less than 10% create no discernible environmental impact. Thus, the identified level of two peak daily HGV potentially hazardous load deliveries (four total movements per day) detailed in **Section 26.7.2** would not be significant and therefore no cumulative effects are anticipated during the O&M phase.
TT-O-10	Onshore impacts of traffic associated with offshore operational activities and any cumulative effects - road vehicle movements associated with deliveries and personnel transport to/from ports to enable offshore O&M works	No	Given that the O&M base port is not currently known, and in the absence of the anticipated type and number of road vehicle movements, potential impacts are not fully understood. Traffic impacts associated with operations of the O&M base port for the Project, including cumulative effects, will be addressed through a DCO requirement for a PAMP (if determined to be required post-consent (see **Table 26-6**, Commitment ID CO102)
Decommissioning			
There is insufficient information available on other plans and projects which could have a spatial and temporal overlap with the Project's onshore decommissioning works. The details and scope of onshore decommissioning works will be determined by the relevant regulations and guidance at the time of decommissioning and provided in the Onshore Decommissioning Plan (see **Table 26-6,** Commitment ID CO56). This will include a detailed assessment of decommissioning impacts and appropriate mitigation measures to avoid significant effects, including cumulative effects. For this assessment, it is assumed that cumulative decommissioning effects would be of similar nature to, and no worse than, those identified during the construction phase.			

26.8.2 Screening for Other Plans / Projects

315. The second step of the CEA identifies a short-list of other plans and projects that have the potential to interact with the Project to give rise to significant cumulative effects during the construction and O&M phases. The short-list provided in **Table 26-38** has been produced specifically to assess cumulative effects on traffic and transport receptors.

316. For traffic and transport to determine the initial list of projects considered for the CEA consideration has been given to whether the projects would overlap temporally and if the respective Traffic and Transport Study Areas would overlap spatially. Where a project's dates are not specified, a temporal overlap has been assumed.

317. The exhaustive list of all onshore plans and projects considered in the development of the Project's CEA framework is provided in **Volume 2, Appendix 6.5 Cumulative Effects Screening Report - Onshore**.

318. Developments that were fully operational during baseline characterisation, including at the time of site-specific surveys, are considered as part of baseline conditions for the surrounding environment. It is assumed that any residual effects associated with these developments are captured within the baseline information. As such, these developments are not subject to further assessment within the CEA and excluded from the screening exercise presented in **Table 26-38**.

319. For developments that were not fully operational, including those in planning / pre-construction stages or under construction, during baseline characterisation and operational developments with potential for ongoing impacts, these are included in the screening exercise presented in **Table 26-38**.

320. The screening exercise has been undertaken based on available information on each plan or project up to and including 31st December 2024. Information has been obtained from the Planning inspectorate's Nationally Significant Infrastructure Projects portal, ERYC and Hull City Council planning portals. It is noted that further information regarding the identified plans and projects may become available between PEIR publication and DCO application submission or may not be available in detail prior to construction. The assessment presented here is therefore considered to be conservative at the time of PEIR publication. The list of plans and projects will be updated at ES stage to incorporate more recent information at the time of writing.

321. Plans and projects identified in **Table 26-38** have been assigned a tier based on their development status, the level of information available to inform the CEA and the degree of confidence. A three-tier system based on the Planning Inspectorate Advice Note Seventeen has been adopted (PINS, 2024).

322. The Zone of Influence (ZoI) used to identify relevant plans and projects for the traffic and transport CEA is to be located within or immediately adjacent to the Traffic and Transport Study Area (See **Figure 26-1**).

323. Each plan or project in **Table 26-38** has been considered on a case-by-case basis. Only plans and projects with potential for significant cumulative effects with the Project will be taken forward to a detailed assessment at ES, and are screened based on the following criteria:

- There is potential that a pathway exists whereby an impact could have a cumulative effect on a receptor;
- The impact on a receptor from the Project and the plan or project in consideration has a spatial overlap (i.e. occurring over the same area);
- The impact on a receptor from the Project and the plan or project in consideration has a temporal overlap (e.g. occurring at the same time);
- There is sufficient information available on the plan or project in consideration and moderate to high data confidence to undertake a meaningful assessment; and
- There is some likelihood that the residual effect (i.e. after accounting for mitigation measures) of the Project could result in significant cumulative effects with the plan or project in consideration.

324. The CEA for traffic and transport has identified a total of seven plans and projects where significant cumulative effects could arise in combination with the Project. The accompanying **Volume 2, Appendix 26.2 Transport Assessment** details the use of TEMPro to account for sub-regional growth in housing and employment. A detailed assessment of cumulative effects will be provided at the ES stage.

Table 26-38 Short List of Plans / Projects for the Traffic and Transport Cumulative Effects Assessment

Project / Plan	Development Type	Status	Tier	Construction / Operation Period	Closest Distance to Onshore ECC (km)	Closest Distance to OCS Zone 4 (km)	Closest Distance to OCS Zone 4 (km)	Potential for Significant Cumulative Effects	Rationale
A164 And Jock's Lodge Junction Improvement Scheme Adjacent to and South of Beverley Road (20/01073/STPLF)	Road Improvement Scheme	Under Construction	1	Construction: 2024 to 2026 Operation: 2027+	0.77	0.40	1.94	No	The Jock's Lodge scheme is identified by ERYC to be complete by Q4 2026, with construction started in Q2 2024. Thus, the road will be open to traffic prior to commencement of the Project's construction.
A63 Castle Street Improvements (TR10016)	Road Improvements Scheme	Under Construction	1	Construction: 2024 to 2026 Operation: 2027+	9.02	10.05	10.84	No	The improvement scheme will be open to traffic prior to commencement of the Project's construction.
Creyke Beck Solar Farm (21/02335/STPLF)	Solar Farm	Approved	1	Construction: Unknown Operation: Unknown	0.33	1.05	1.56	No	Potential for spatial and temporal overlap of construction activities in the Traffic and Transport Study Area. Notwithstanding, the submitted CTMP for solar farm project details a worst-case scenario of 40 HV movements at peak over a six-month construction duration and identifies no significant construction or operational traffic and transport impacts.
Dogger Bank A Offshore Wind Farm (EN010021)	Offshore Wind Farm	Operational	1	Operation: 2025+	0	0.50	2.66	No	Dogger Bank A & B would be operational prior to commencement of the Project's construction, and the ES Traffic and Transport chapter for Dogger Bank A & B identifies no significant operational traffic and transport impacts.
Dogger Bank B Offshore Wind Farm (EN010021)	Offshore Wind Farm	Under Construction	1	Construction: 2020 to 2025 Operation: 2026+	0	0.50	2.66	No	
Dogger Bank South Offshore Wind Farms (EN010125)	Offshore Wind Farm	Examination	1	Construction: 2026 to 2033 Operation: 2034+	0	0.10	0.30	Yes	Potential for spatial and temporal overlap of construction activities in the Traffic and Transport Study Area.
Eastern Green Link 2 (22/01990/STPLFE)	Electricity Interconnector	Under Construction	1	Construction: 2024 to 2026 Operation: 2029+	4.51	11.74	10.36	No	Eastern Green Link 2 would be operational prior to commencement of the Project's construction, and the ES Traffic and Transport chapter for the Eastern Green Link 2 identifies no significant operational traffic and transport impacts.
Hornsea Project Four Offshore Wind Farm (EN010098)	Offshore Wind Farm	Under Construction	1	Construction: 2024 to 2028 Operation: 2029+	0	0.11	0.01	No	The offshore wind farm would be operational prior to commencement of the Project's construction, and the traffic and transport ES chapter and technical report of Hornsea Project Four identifies no significant operational traffic and transport impacts.

Project / Plan	Development Type	Status	Tier	Construction / Operation Period	Closest Distance to Onshore ECC (km)	Closest Distance to OCS Zone 4 (km)	Closest Distance to OCS Zone 4 (km)	Potential for Significant Cumulative Effects	Rationale
Humber International Enterprise Park (18/04071/STPLFE)	Mixed Use Development	Planning	1	Construction: 2025 to Unknown	14.9	15.6	17.2	Yes	Requested by ERYC to be included within the CEA. Discussions to be held with stakeholders post-PEIR submission to understand likely timescales of construction and development of the mixed use development project. Potential for spatial and temporal overlap of construction and operational activities in the Traffic and Transport Study Area.
Wanlass Beck National Grid Substation (24/03819/STPLF)	Electricity Transmission Infrastructure	Pending Consideration	1	Construction: 2026 to 2039 Operation: 2031+	0.91	2.09	3.02	Yes	Potential for spatial and temporal overlap of construction activities in the Traffic and Transport Study Area.
Yorkshire Energy Park (22/00301/STREME)	Mixed Use Development	Approved	1	Construction: 2022 to Unknown	14.9	15.6	17.2	Yes	Requested by ERYC to be included within the CEA. Discussions to be held with stakeholders post-PEIR submission to understand likely timescales of construction and development of the mixed use development project. Potential for spatial and temporal overlap of construction and operational activities in the Traffic and Transport Study Area.
Peartree Hill Solar Farm (EN010157)	Solar Farm	Planning	2	Construction: 2026 to 2027 Operation: 2028+	0.42	1.05	2.66	No	The solar farm would be operational prior to commencement of the Project's construction, and the PEIR chapter for Peartree Hill identifies no significant operational traffic and transport impacts.
Birkhill Wood National Grid Substation	Electricity Transmission Infrastructure	Planning	3	Construction: 2026 to 2030 Operation: 2031+	0	1.11	2.31	Yes	No planning application for the New National Grid Electricity Transmission Substation has been submitted at this stage and therefore there is limited detail on potential for temporal or spatial overlaps. The National Grid Substation project is therefore included at this stage.
Humber Carbon Capture Pipeline (EN0710003)	Gas Pipeline	Planning	3	Construction: 2028 to 2032 Operation: 2033+	15.35	16.31	15.44	Yes	No planning application (ES Chapters for Humber Carbon Capture Pipeline due Q4 2026) has been submitted at this stage and therefore there is limited detail on potential for temporal or spatial overlaps. The Carbon Pipeline project is therefore included at this stage and will be re-examined at ES stage.
North Humber to High Marnham Grid Upgrade (EN020034)	Electricity Transmission Infrastructure	Planning	3	Construction: 2026 to 2030 Operation: 2031+	0	0.89	0.41	Yes	Potential for spatial and temporal overlap of construction activities in the Traffic and Transport Study Area.

26.9 Inter-Relationships and Effects Interactions

26.9.1 Inter-Relationships

325. Inter-relationships are defined as effects arising from residual effects associated with different environmental topics acting together upon a single receptor or receptor group. Potential inter-relationships between traffic and transport and other environmental topics have been considered, where relevant, within the PEIR. **Table 26-39** provides a summary of key inter-relationships and signposts to where they have been addressed in the relevant chapters.

Table 26-39 Traffic and Transport – Inter-Relationships with Other Topics

Impact ID	Impact and Project Activity	Related EIA Topic	Where Assessed in the PEIR Chapter	Rationale
Construction				
TT-C-01 TT-C-02 TT-C-03	Severance – road vehicle movements associated with onshore construction activities Amenity - road vehicle movements associated with onshore construction activities Fear and intimidation – road vehicle movements associated with onshore construction activities	**Chapter 20 Air Quality and Dust**	**Section 26.7.1.2**, **26.7.1.3** and **26.7.1.4**.	Traffic has the potential to temporarily affect air quality and impact upon local residents.
		Chapter 25 Noise and Vibration		Traffic has the potential to increase noise disturbance temporarily.
		Chapter 29 Human Health		Traffic associated with construction may generate localised dust emissions leading to potential complaints.
		Chapter 30 Socio-Economics, Tourism and Recreation		Traffic associated with construction may impact the local demography.
TT-C-04	Road safety (including hazardous loads) – road vehicle movements and transport of hazardous materials associated with onshore construction activities	**Chapter 30 Socio-Economics, Tourism and Recreation**	**Section 26.7.1.5**	Traffic Associated with construction may impact the local demography.
TT-C-05 TT-C-06 TT-C-07	Driver delay (capacity) – road vehicle movements associated with onshore construction activities Driver delay (highway geometry) – road vehicle movements associated with onshore construction activities Driver delay (road closures) – road vehicle movements associated with onshore construction activities	**Chapter 20 Air Quality and Dust**	**Section 26.7.1.6, 26.7.1.7** and **26.7.1.8**	Traffic has the potential to temporarily affect air quality and impact upon local residents.
Operation and Maintenance				
TT-O-04	Road safety (hazardous loads only) - road vehicle movements and transport of hazardous loads associated with replacement of ESBI components	**Chapter 30 Socio-Economics, Tourism and Recreation**	**Section 26.7.2.2**	Traffic associated with operation may impact the local demography.
Decommissioning				
The details and scope of onshore decommissioning works will be determined by the relevant regulations and guidance at the time of decommissioning and provided in the Onshore Decommissioning Plan (see **Table 26-6**, Commitment ID CO56). For this assessment, it is assumed that inter-relationships during the decommissioning phase would be of similar nature to those identified during the construction phase.				

26.9.2 Interactions

326. The impacts identified and assessed in this chapter have the potential to interact with each other. Potential interactions between impacts are identified in **Table 26-40**.

327. Interactions are assessed by development phase ("phase assessment") to see if multiple impacts could increase the overall effect significance experienced by a single receptor or receptor group during each phase.

328. Impacts TT-C-01 (Severance), TT-C-02 (Amenity) and TT-C-03 (Fear and Intimidation) are considered to be closely related and of a similar nature, and it is identified in **Table 26-40** that traffic would impact upon similar receptor groups (pedestrians, cyclists and equestrians). Therefore, the maximum forecasted effect for impacts TT-C-01, TT-C-02 or TT-C-03 would not be exceeded due to interactions. However, there is potential for impacts TT-C-01, TT-C-02 and TT-C-03 to collectively interrelate with impact TT-C-04 (Road Safety (including Hazardous Loads)).

329. It is identified in **Table 26-40** that impacts TT-C-05 (Driver Delay – Capacity), TT-C-06 (Driver Delay – Highway Geometry) and TT-C-07 (Driver Delay – Road Closures) are also considered to be closely related and have potential to interact with each other to increase driver delay significance.

330. **Volume 2, Appendix 26.4 Interactions Assessment** contains a detailed assessment of the identified interactions (Impacts TT-C-01, TT-C-02, TT-C-03 and TT-C-04, plus impacts TT-C-05, TT-C-06 and TT-C-07) and concludes that there are no significant interactions between impacts from the construction of the Project on traffic and transport.

331. As all other operational impacts have been scoped out of the assessment, with the exception of TT-O-04 (Road Safety (Hazardous Loads Only)) which was found to be not significant with a total of four peak daily movements forecasted, a phase assessment was not undertaken for interactions during the O&M phase. In addition, a lifetime assessment, which considers the potential for multiple impacts to accumulate across the construction, O&M and decommissioning phases and result in a greater effect on a single receptor or receptor group, was also not undertaken.

Table 26-40 Traffic and Transport – Potential Interactions between Impacts throughout the Project's lifetime

Construction							
	TT-C-01	**TT-C-02**	**TT-C-03**	**TT-C-04**	**TT-C-05**	**TT-C-06**	**TT-C-07**
Severance (TT-C-01)		Yes	Yes	Yes	No	No	No
Amenity (TT-C-02)	Yes		Yes	Yes	No	No	No
Fear and Intimidation (TT-C-03)	Yes	Yes		Yes	No	No	No
Road Safety (including Hazardous Loads) (TT-C-04)	Yes	Yes	Yes		No	No	No
Driver Delay (Capacity) (TT-C-05)	No	No	No	No		Yes	Yes
Driver Delay (Highway Geometry) (TT-C-06)	No	No	No	No	Yes		Yes
Driver Delay (Road Closures) (TT-C-07)	No	No	No	No	Yes	Yes	
Operation and Maintenance							
Interactions with respect to operational traffic and transport impacts are screened out.							
Decommissioning							
The details and scope of onshore decommissioning works will be determined by the relevant regulations and guidance at the time of decommissioning and provided in the Onshore Decommissioning Plan (see **Table 26-6,** Commitment ID CO56). For this assessment, it is assumed that interactions during the decommissioning phase would be of similar nature to, and no worse than, those identified during the construction phase.							

26.10 Monitoring Measures

332. Monitoring measures for traffic movements to be adopted during the construction of the Project have been identified as part of the mitigation measures proposed as part of the Outline CTMP (see **Table 26-6**, Commitment ID CO73), which will be further developed and agreed with stakeholders prior to construction. These measures will ensure that:

- The construction traffic parameters (e.g. traffic numbers and routes) assessed within the EIA are managed and not exceeded;
- The employee traffic numbers and mode share are recorded so that proposed mitigation measures are effectively utilised and managed;
- The emerging patterns of collisions recorded on the local road network are analysed, and appropriate mitigation measures would be implemented; and
- The governance and enforcement of the mitigation measures are set out in the Outline CTMP, upholding the traffic parameters (e.g. traffic numbers and routes).

333. Indicative monitoring measures which are included in the draft version of the **Outline Construction Traffic Management Plan** (document reference 8.15) are set out in **Table 26-41**.

Table 26-41 Indicative Monitoring Measures Included in the Outline Construction Traffic Management Plan

Outline CTMP: Monitoring Measures for Traffic and Transport

CTMP Governance

Prior to the commencement of the relevant stage of onshore construction works, a Traffic Management Coordinator(s) (TMCo) will be appointed by the Principal Contractor(s). Their key responsibilities will include:

- Managing the implementation of the approved CTMP during construction;
- Collating monitoring data and preparing a monitoring report;
- Acting as a point of contact for the local community with respect to construction traffic queries and complaints in conjunction with the Undertaker's appointed Community Liaison Officer(s) (CLO);
- Regular liaison and reporting to the Undertaker;
- Sharing information with emergency and healthcare services, e.g. dates of any road closures, abnormal load movements, etc;
- Supporting the Undertaker with highway stakeholder engagement; and
- Acting as a point of contact for construction workers and subcontractor(s).

Each Principal Contractor(s) will be required to appoint its own TMCo, and in this case, the Undertaker will appoint a representative to liaise with the TMCo to ensure that cumulative traffic impacts from all contracts would not exceed the Outline CTMP parameters and that mitigation and control measures are applied consistently.

Outline CTMP: Monitoring Measures for Traffic and Transport

The TMCo will also be assisted in their role by the Community Liaison Officer(s) (CLO). The Undertaker's designated CLO will be responsible for the overall management of the local community liaison framework and serve as the first contact for enquiries and / or complaints received. Local communities will be advised of the likely timetable of works through the CLO. Further details will be provided in a Communications Plan which will be provided as part of the Code of Construction Practice (CoCP). A Communications Plan is required as set out under Commitment ID CO80.

Contact details for the TMCo and CLO will be included in the stage-specific CTMP submitted to the relevant highway authorities prior to the commencement of the relevant stage of construction works.

HGV Numbers

To ensure compliance with the realistic worst-case scenario for HGV trips assessed in the EIA, a booking system for deliveries will be established by the TMCo. The booking system will enable a daily profile of deliveries to be maintained and allow the TMCo to ensure that the required deliveries are forecasted and planned.

HGV Routeing

Each HGV associated with the Project will be required to display an easily recognisable marker (i.e. a unique identifier) that helps distinguish project-related vehicles from others. This will help the community, project staff, and authorities quickly recognise and differentiate vehicles associated with the Project and allow reporting of any concerns such as driver behaviour or the use of unapproved routes via a publicised telephone contact number.

The procurement process will ensure that weighting is given to the selection of suppliers with vehicle tracking software. Vehicle tracking software, together with delivery records, will help with real-time monitoring, ensure compliance with designated routes and schedules, improve safety, and allow for better planning and communication with stakeholders.

Employee Monitoring

All employees and visitors entering a site will be required to sign in and out. By capturing employee and visitor travel data, including the method of travel and arrival / departure times, the TMCo can effectively monitor and assess compliance with the CTMP.

Road Safety

The TMCo will operate a 'near miss' reporting system for all highways incidents. During inductions, drivers will be briefed about the system and informed of the requirement to report all incidents to the TMCo who will then record them in the system.

The TMCo will retain records of all incidents and submit them to the relevant highway authorities on request. If emerging issues are identified, the TMCo will initiate discussions with stakeholders to promote a 'Zero Harm Culture'.

Monitoring Reports

Data recorded from the monitoring processes outlined above will be drawn together by the TMCo to produce a monthly monitoring report, which will be made available to the relevant highway authorities on request.

In compiling the monitoring report, the TMCo will be able to identify effective / ineffective measures and the requirement for any remedial action to achieve the agreed targets. A typical structure for the monitoring report will be as follows:

Outline CTMP: Monitoring Measures for Traffic and Transport

- Introduction and Background – this will provide details with regards to the types of works being undertaken and number of construction workers;
- Results of Surveys and Monitoring – the TMCo will collate the results of surveys and monitoring that have been undertaken. Where appropriate, the results of the surveys undertaken will be compared to the targets defined in the Outline CTMP. Data obtained from the surveys will be included as an appendix;
- Achievements – this will include the work undertaken over the previous period with evidence and examples;
- Specific Measures – this will detail how all measures from the CTMP have been implemented;
- Summary – the TMCo will detail whether the CTMP is on track to meet its targets and if not, why not; and
- Future Plan – this will detail the CTMP for the next period to include any specific outcomes or desired results with any additional measures that are to be included to remediate action.

26.11 Summary

334. This chapter has assessed the potential effects of the onshore infrastructure of the Project on the surrounding traffic sensitive receptors.

335. This chapter has been developed with regard to the legislative and policy framework outlined in **Section 26.2** and further informed by consultation with ERYC, Hull City Council and National Highways (see **Section 26.3**).

336. Traffic demand has been forecast by applying a first principles approach to generate traffic volumes from an understanding of material quantities and personnel numbers. This traffic demand has been assigned to access locations serving the Project and applying a package of embedded mitigation to minimise the significance of effects.

337. In accordance with national guidance, a Traffic and Transport Study Area has been identified, baseline conditions established and sensitive receptors within the Traffic and Transport Study Area identified. The Traffic and Transport Study Area was screened to identify routes that could be potentially adversely affected by the Project's traffic generation.

338. A total of 91 highway links across 120km of highway network within the Traffic and Transport Study Area have been assessed for the impacts of amenity, severance, fear and intimidation, road safety (including hazardous loads), driver delay (capacity, geometry and road closures). With the application of additional mitigation measures (as appropriate), the residual effect upon all receptors was assessed to not be significant in EIA terms.

339. Many of the impacts will be managed via the CTMP (see **Table 26-6**, Commitment ID CO73) and are temporary and reversible once construction is complete. A draft version of the **Outline Construction Traffic Management Plan** (document reference 8.15) is submitted as part of the PEIR for stakeholder review.

340. **Table 26-42** presents a summary of the preliminary results of the assessment of likely significant effects on traffic and transport during the construction, operation and decommissioning of the Project.

26.12 Next Steps

341. The Traffic and Transport ES chapter will include an updated baseline environment and impact assessment following refinements of the Onshore Development Area and the Project Design Envelope. The chapter will also incorporate any additional data which has become available following the submission of the PEIR, as well as consideration of relevant comments received as part of the statutory consultation.

342. The driver delay (capacity) impacts (TT-C-05) and the CEA will be undertaken and at the ES stage following further discussions with stakeholders post-PEIR submission. The Outline CTMP will also be updated following refinements of the Onshore Development Area and the Project Design Envelope, and the final AIL report will also be provided with the ES chapter.

Table 26-42 Summary of Potential Effects Assessed for Traffic and Transport

Impact ID	Impact and Project Activity	Embedded Mitigation Measures	Receptor	Receptor Sensitivity	Impact Magnitude	Effect Significance	Additional Mitigation Measures	Residual Effect	Monitoring Measures
Construction									
TT-C-01	Severance – road vehicle movements associated with onshore construction activities	CO64 CO69 CO72 CO73 CO75 CO76	Links 3, 4, 7, 8, 9, 10, 11, 13, 14, 15, 16, 17, 18, 19, 31, 34, 37, 39, 40, 45, 46, 49, 50, 53, 57, 60, 65, 75.	**Low**	**Negligible**	**Negligible (Not Significant)**	N/A	**Negligible (Not Significant)**	Construction traffic monitoring measures identified as part of the Outline CTMP (CO73)
			Links 58, 72, 84	**Medium**		**Minor Adverse (Not Significant)**		**Minor Adverse (Not Significant)**	
			Links 33, 35, 36, 51, 71, 82, 83, 86, 87, 88	**High**		**Minor Adverse (Not Significant)**		**Minor Adverse (Not Significant)**	
			Links 48, 52, 56, 69, 73, 100	**Low**	**Low**	**Minor Adverse (Not Significant)**		**Minor Adverse (Not Significant)**	
			Link 81	**Medium**		**Minor Adverse (Not Significant)**		**Minor Adverse (Not Significant)**	
			Link 59	**High**		**Moderate Adverse (Significant)**	Additional mitigation measures identified as part of the Outline CTMP (CO73)	**Minor Adverse (Not Significant)**	
			Links 67, 79, 85, 99	**Low**	**Medium**	**Minor Adverse (Not Significant)**	N/A	**Minor Adverse (Not Significant)**	
			Link 68	**High**		**Major Adverse (Significant)**	Additional mitigation measures identified as part of the Outline CTMP (CO73)	**Minor Adverse (Not Significant)**	

Impact ID	Impact and Project Activity	Embedded Mitigation Measures	Receptor	Receptor Sensitivity	Impact Magnitude	Effect Significance	Additional Mitigation Measures	Residual Effect	Monitoring Measures
TT-C-02	Amenity – road vehicle movements associated with onshore construction activities	CO64 CO69 CO72 CO73 CO75 CO76	Links 3, 4, 7, 9, 10, 11, 13, 14, 15, 16, 17, 18, 19, 31, 34 37, 39, 40, 41, 45, 46, 57, 60, 65, 75	**Low**	**Low**	**Minor Adverse (Not Significant)**	N/A	**Minor Adverse (Not Significant)**	Construction traffic monitoring measures identified as part of the Outline CTMP (CO73)
			Links 8, 58, 84	**Medium**		**Minor Adverse (Not Significant)**		**Minor Adverse (Not Significant)**	
			Links 33, 35, 36, 82, 83, 86	**High**		**Moderate Adverse (Significant)**	Additional mitigation measures identified as part of the Outline CTMP (CO73)	**Minor Adverse (Not Significant)**	
			Links 49, 50, 69, 85	**Low**	**Medium**	**Minor Adverse (Not Significant)**	N/A	**Minor Adverse (Not Significant)**	
			Links 72, 73, 81	**Medium**		**Moderate Adverse (Significant)**	Additional mitigation measures identified as part of the Outline CTMP (CO73)	**Minor Adverse (Not significant)**	
			Links 51, 71, 87, 88	**High**		**Major Adverse (Significant)**		**Minor Adverse (Not Significant)**	
			Links 48, 52, 53, 56, 67, 79, 99, 100	**Low**	**High**	**Moderate Adverse (Significant)**		**Minor Adverse (Not Significant)**	
			Links 59, 68	**High**		**Major Adverse (Significant)**		**Minor Adverse (Not Significant)**	
TT-C-03	Fear and intimidation – road vehicle movements associated with onshore construction activities	CO64 CO69 CO72	Links 3, 4, 7, 10, 11, 13, 14, 15, 16, 17, 18, 19, 31, 34, 37, 39, 40, 41, 45, 46, 48, 49, 50, 52, 53, 56, 57, 60, 65, 67, 69, 73, 75, 79, 85, 99, 100	**Low**	**Negligible**	**Negligible (Not Significant)**	N/A	**Negligible (Not Significant)**	

Impact ID	Impact and Project Activity	Embedded Mitigation Measures	Receptor	Receptor Sensitivity	Impact Magnitude	Effect Significance	Additional Mitigation Measures	Residual Effect	Monitoring Measures
TT-C-04	Road safety (including hazardous loads) – road vehicle movements and transport of hazardous materials associated with onshore construction activities	CO73 CO75 CO76	Links 8, 58, 72, 81, 84	**Medium**		**Minor Adverse (Not Significant)**	N/A	**Minor Adverse (Not Significant)**	Construction traffic monitoring measures identified as part of the Outline CTMP (CO73)
			Links 33, 35, 36, 51, 59, 68, 71, 82, 83, 86, 87, 88	**High**		**Minor Adverse (Not Significant)**		**Minor Adverse (Not Significant)**	
			Link 9	**Low**	**Low**	**Minor Adverse (Not Significant)**		**Minor Adverse (Not Significant)**	
		CO64 CO69 CO72 CO73 CO74 CO75 CO76	Links 79, 99	**Negligible**	**High**	**Minor Adverse (Not Significant)**	N/A	**Minor Adverse (Not Significant)**	Construction traffic monitoring measures identified as part of the Outline CTMP (CO73)
			Links 6, 18, 25, 35, 42, 45, 50, 60, 61, 62, 63, 66, 74, 75, 76, 83, 86, 88	**Low**	**Negligible**	**Negligible (Not Significant)**		**Negligible (Not Significant)**	
			Links 9, 10, 11, 12, 71		**Low**	**Minor Adverse (Not Significant)**		**Minor Adverse (Not significant)**	
			Links 16, 22, 23, 26, 36, 37, 40, 49, 54, 57, 58, 80, 87	**Medium**	**Negligible**	**Minor Adverse (Not Significant)**		**Minor Adverse (Not Significant)**	
			Links 4, 27, 72		**Low**	**Minor Adverse (Not Significant)**		**Minor Adverse (Not Significant)**	
			Links 20, 21, 24, 28, 30, 32, 33, 43	**High**	**Negligible**	**Minor Adverse (Not Significant)**	N/A	**Minor Adverse (Not Significant)**	

Impact ID	Impact and Project Activity	Embedded Mitigation Measures	Receptor	Receptor Sensitivity	Impact Magnitude	Effect Significance	Additional Mitigation Measures	Residual Effect	Monitoring Measures
			Links 17, 31, 38, 41		**Low**	**Moderate Adverse (Significant)**	Additional mitigation measures identified as part of the Outline CTMP (CO73)	**Negligible (Not Significant)**	
			Links 39, 52		**Medium**	**Major Adverse (Significant)**		**Minor Adverse (Not Significant)**	
			Link 51		**High**	**Major Adverse (Significant)**		**Minor Adverse (Not Significant)**	
TT-C-05	Driver delay (capacity) – road vehicle movements associated with onshore construction activities	CO64 CO69 CO72 CO73 CO75 CO76	The scope of the driver delay (capacity) assessment will be refined post-PEIR in consultation with the relevant highway authorities and presented in the ES. Should potentially significant effects be identified, additional mitigation measures will be proposed to ensure residual effects are not significant.						
TT-C-06	Driver delay (highway geometry) – road vehicle movements associated with onshore construction activities	CO64 CO69 CO72 CO73 CO75 CO76 CO77 CO78	Link 64	**Low**	**Negligible**	**Negligible (Not Significant)**	N/A	**Negligible (Not Significant)**	Construction traffic monitoring measures identified as part of the Outline CTMP (CO73)
			Link 70	**Medium**		**Minor Adverse (Not Significant)**		**Minor Adverse (Not Significant)**	
			Link 57	**Low**	**Medium**	**Minor Adverse (Not Significant)**	N/A	**Minor Adverse (Not Significant)**	
			Links 69, 85	**Medium**		**Moderate Adverse (Significant)**	Additional mitigation measures identified as part of the Outline CTMP (CO73)	**Minor Adverse (Not Significant)**	
			Link 72	**High**		**Major Adverse (Significant)**		**Minor Adverse (Not Significant)**	

Impact ID	Impact and Project Activity	Embedded Mitigation Measures	Receptor	Receptor Sensitivity	Impact Magnitude	Effect Significance	Additional Mitigation Measures	Residual Effect	Monitoring Measures
			Links 73, 79	**Low**	**High**	**Moderate adverse (Significant)**		**Minor Adverse (Not Significant)**	
			Link 81	**Medium**		**Major Adverse (Significant)**		**Minor Adverse (Not Significant)**	
			Links 56, 67, 68, 99, 100	**High**		**Major Adverse (Significant)**		**Minor Adverse (Not Significant)**	
TT-C-07	Driver delay (road closures) – road vehicle movements associated with onshore construction activities	CO64 CO69 CO72 CO73 CO75 CO76 CO77 CO78	Bewholme Lane Dunnington Lane Rootas Lane (east) Middlehowe Road	**Low**	**Low**	**Minor Adverse (Not Significant)**	N/A	**Minor Adverse (Not Significant)**	Construction traffic monitoring measures identified as part of the Outline CTMP (CO73)
			Burshill Carr Road Dunflat Road	**Low**	**High**	**Moderate Adverse (Significant)**	Additional mitigation measures identified as part of the Outline CTMP (CO73)	**Minor Adverse (Not Significant)**	
TT-C-08	Abnormal loads – road vehicle movements and transport of abnormal loads associated with onshore construction activities	CO64 CO69 CO72 CO73 CO75 CO76	All road users	A preliminary AIL summary report is provided in **Volume 2, Appendix 26.3 Abnormal Indivisible Load Summary Report**. Further details will be provided at ES stage in the final AIL summary report.					
TT-C-10	Onshore impacts of traffic associated with offshore construction activities and any cumulative effects - road vehicle movements associated with deliveries and personnel transport to/from ports to enable offshore construction works	CO102	Not applicable as impacts not assessed. These impacts will be addressed through a DCO requirement for a PAMP (see **Table 26-6**, Commitment ID CO102) to be developed (if required) and agreed with the relevant authorities prior to construction once the preferred offshore construction base port(s) for the Project has been confirmed.						

Impact ID	Impact and Project Activity	Embedded Mitigation Measures	Receptor	Receptor Sensitivity	Impact Magnitude	Effect Significance	Additional Mitigation Measures	Residual Effect	Monitoring Measures
Operation and Maintenance									
TT-O-04	Road safety (hazardous loads only) - road vehicle movements and transport of hazardous loads associated with replacement of ESBI components	N/A	Links 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 38, 39, 40, 41, 42, 45, 46, 48, 49, 50, 52, 74 and 75	**Negligible**	**High**	**Minor Adverse (Not Significant)**	N/A	**Minor Adverse (Not Significant)**	N/A
TT-O-10	Onshore impacts of traffic associated with offshore operational activities and any cumulative effects - road vehicle movements associated with deliveries and personnel transport to/from ports to enable offshore O&M works	CO102	Not applicable as impacts not assessed. These impacts will be addressed through a DCO requirement for a PAMP (see **Table 26-6**, Commitment ID CO102) to be developed (if required) and agreed with the relevant authorities prior to operation once the preferred O&M base port for the Project has been confirmed.						
Decommissioning									
TT-D-01	Severance - decommissioning activities not yet defined	CO56	The details and scope of onshore decommissioning works will be determined by the relevant regulations and guidance at the time of decommissioning and provided in the Onshore Decommissioning Plan (see **Table 26-6**, Commitment ID CO56). This will include a detailed assessment of decommissioning impacts and appropriate mitigation measures to avoid significant effects. For this assessment, it is assumed that impacts during the decommissioning phase would be of similar nature to, and no worse than, those identified during the construction phase.						
TT-D-02	Amenity - decommissioning activities not yet defined								
TT-D-03	Fear and intimidation - decommissioning activities not yet defined								
TT-D-04	Road safety (including hazardous loads) - decommissioning activities not yet defined								
TT-D-05	Driver delay (capacity) - decommissioning activities not yet defined								
TT-D-06	Driver delay (highway geometry) - decommissioning activities not yet defined								

Impact ID	Impact and Project Activity	Embedded Mitigation Measures	Receptor	Receptor Sensitivity	Impact Magnitude	Effect Significance	Additional Mitigation Measures	Residual Effect	Monitoring Measures
TT-D-07	Driver delay (road closures) - decommissioning activities not yet defined								
TT-D-08	Abnormal loads - decommissioning activities not yet defined								
TT-D-10	Onshore impacts of traffic associated with offshore decommissioning activities and any cumulative effects - decommissioning activities not yet defined								

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List of Tables and Figures

List of Tables

List of Figures

List of Acronyms

Acronym	Definition
AIL	Abnormal Indivisible Load
AP	Access Points
CEA	Cumulative Effects Assessment
CLO	Community Liaison Officer
CoCP	Outline Code of Construction Practice
CTMP	Construction Traffic Management Plan
DBD	Dogger Bank D
DCO	Development Consent Order
DMRB	Design Manual for Roads and Bridges
EATM	Environmental Assessment of Traffic and Movement (2023)
ECC	Export Cable Corridor
EIA	Environmental Impact Assessment
EPP	Evidence Plan Process
ERYC	East Riding of Yorkshire Council
ESBI	Energy Storage and Balancing Infrastructure
ESDAL	Electronic Service Delivery Abnormal Loads
ETG	Expert Topic Group
HGV	Heavy Goods Vehicle
HV	Heavy Vehicles
IEMA	Institute of Environmental Management and Assessment
JLJIS	A164 and Jocks Lodge Junction Improvement Scheme
Km	Kilometre
LV	Light Vehicles
NCN	National Cycle Network
NCR	National Cycle Route
NPPF	National Planning Policy Framework
NPS	National Policy Statement
NRSWA	New Roads and Street Works Act (1991)
O&M	Operation and Maintenance
OCS	Onshore Convertor Station
PAMP	Port Access Management Plan
PC	Principal Contractor
PEIR	Preliminary Environmental Information Report
PPG	Planning Policy Guidance
PRoW	Public Rights of Way
RTRA	Road Traffic Regulation Act (1984)
SRN	Strategic Road Network
TA	Transport Assessment
TAG	Transport Analysis Guidance
TEMPro	Transport Trip End Model Presentation Programme
TJB	Transition Joint Bay
TMA	Traffic Management Act 2004
TS	Transport Statement
UK	United Kingdom
ZoI	Zone of Influence