

Outer Dowsing Offshore Wind

Environmental Statement

Chapter 27 Onshore Traffic and Transport

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- Appendix 27.1 Transport Assessment

Acronyms & Terminology

Abbreviations / Acronyms

Abbreviation / Acronym	Description
AADT	Annual Average Daily Traffic
ADT	Average Daily Traffic
AIL	Abnormal Indivisible Load
ALAR	Abnormal Load Assessment Report
AQMA	Air Quality Management Area
ATC	Automatic Traffic Count
BAEF	Boston Alternative Energy Facility
BAPA	Basic Asset Protection Agreement
BBC	Boston Borough Council
BOAT	Byways Open to All Traffic
CIC	Cable Installation Compound
CTMP	Construction Traffic Management Plan
DC	Document Controller
DCO	Development Consent Order
DfT	Department for Transport
DMRB	Design Manual for Roads and Bridges
ECC	Export Cable Corridor
EIA	Environmental Impact Assessment
EPP	Evidence Plan Process
ES	Environmental Statement
ESDAL	Electronic Service Delivery for Abnormal Loads
ETG	Expert Topic Group
GA	General Arrangement
GEART	Guidelines on the Environmental Assessment of Road Traffic
GIG	Green Investment Group
HGV	Heavy Goods Vehicle
IDC	Inter-disciplinary check
IEMA	Institute of Environmental Management and Assessment
IFC	Issued for Construction
IFI	Issued for Information
IVB	Independent Verification Body
LCC	Lincolnshire County Council
LDP	Local Development Plan
LGV	Light Goods Vehicle
LRN	Local Road Network
LTP	Local Transport Plan
MDR	Master Document Register
MDS	Maximum Design Scenario
MHWS	Mean High Water Spring
MLHC	Ministry for Levelling Up, Housing and Communities

Abbreviation / Acronym	Description
MLWS	Mean Low Water Spring
NGET	National Grid Electricity Transmission
NGSS	National Grid Substation
NH	National Highways
NPPF	National Planning Policy Framework
NPS	National Policy Statement
NR	Network Rail
NRTF	National Road Traffic Forecasts
NSIP	Nationally Significant Infrastructure Projects
NTM	National Transport Model
ODOW	Outer Dowsing Offshore Wind, trading name of GT R4 Limited
OFTO	Offshore Transmission Owner
OGV	Other Goods Vehicle
OnSS	Onshore Substation
OSS	Offshore Substation
OTP	Outline Travel Plan
PAMP	Public Access Management Plan
PCM	Project Controls Manager
PD	Project Director
PE	Project Engineer
PEIR	Preliminary Environmental Information Report
PIA	Personal Injury Accident
PLE	Project Planning Engineer
PMT	Project Management Team
PRoW	Public Right of Way
RSPB	The Royal Society for the Protection of Birds
SHDC	South Holland District Council
SRN	Strategic Road Network
TCC	Temporary Construction Compound
TCE	The Crown Estate
TE	TotalEnergies
TEMPRO	Trip End Model Presentation Program
TJB	Transition Joint Bay
TP	Travel Plan
TRICS	Trip Rate Information Computer System
UK	United Kingdom
WBS	Work Breakdown Structure
WCH	Walkers, Cyclists and Horse-riders

Terminology

Term	Definition
400kV cables	High-voltage cables linking the OnSS to the NGSS.
The Applicant	GT R4 Ltd. The Applicant making the application for a DCO.

Term	Definition
	The Applicant is GT R4 Limited (a joint venture between Corio Generation, TotalEnergies and Gulf Energy Development (GULF)), trading as Outer Dowsing Offshore Wind. The Project is being developed by Corio Generation (a wholly owned Green Investment Group portfolio company), TotalEnergies and GULF.
Baseline	The status of the environment at the time of assessment without the development in place.
Basic Asset Protection Agreement (BAPA)	The need to protect the working railways from damage and disruption means that a developer will need to enter into a Basic Asset Protection Agreement (BAPA) with Network Rail to ensure that the developer picks up the associated costs.
Connection Area	An indicative search area for the National Grid Substation (NGSS).
Cumulative effects	The combined effect of the Project acting additively with the effects of other developments.
Cumulative impact	Impacts that result from changes caused by other past, present or reasonably foreseeable developments.
Development Consent Order (DCO)	An order made under the Planning Act 2008 granting development consent for a Nationally Significant Infrastructure Project (NSIP).
Effect	Term used to express the consequence of an impact. The significance of an effect is determined by correlating the magnitude of the impact with the sensitivity of the receptor, in accordance with defined significance criteria.
EIA Regulations	Infrastructure Planning (Environmental Impact Assessment) Regulations 2017
Environmental Impact Assessment (EIA)	A statutory 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, which fulfils the assessment requirements of the EIA Regulations, including the publication of an Environmental Statement (ES).
Environmental Statement (ES)	The suite of documents that detail the processes and results of the EIA.
Evidence Plan	A voluntary process of stakeholder consultation with appropriate Expert Topic Groups (ETGs) that discusses and, where possible, agrees the detailed approach to the Environmental Impact Assessment (EIA) and information to support Habitats Regulations Assessment (HRA) for those relevant topics included in the process, undertaken during the pre-application period.
Export cables	Cable which connects the Offshore Reactive Compensation Platform (ORCP) and Offshore Substations (OSS) with the Onshore Substation (OnSS) to transmit power from the wind farm to shore. Cable can be Onshore, landfall and Offshore.
Haul Road	The track within the onshore ECC which the construction traffic would use to facilitate construction.
Impact	An impact to the receiving environment is defined as any change to its baseline condition, either adverse or beneficial.

Term	Definition
Landfall	The location at the land-sea interface where the offshore export cables and fibre optic cables will come ashore.
Maximum Design Scenario	The project design parameters, or a combination of project design parameters that are likely to result in the greatest potential for change in relation to each impact assessed.
Mitigation	Mitigation measures are commitments made by the Project to reduce and/or eliminate the potential for significant effects to arise as a result of the Project. Mitigation measures can be embedded (part of the project design) or secondarily added to reduce impacts in the case of potentially significant effects.
National Grid Onshore Substation (ONSS)	The National Grid substation and associated enabling works to be developed by the National Grid Electricity Transmission (NGET) into which the Project's 400kV Cables would connect.
National Policy Statement (NPS)	A document setting out national policy against which proposals for Nationally Significant Infrastructure Projects (NSIPs) will be assessed and decided upon
Onshore Export Cable Corridor (ECC)	The Onshore Export Cable Corridor (Onshore ECC) is the area within which the export cables running from the landfall to the onshore substation will be situated.
Onshore Infrastructure	The combined name for all onshore infrastructure associated with the Project from landfall to grid connection.
Onshore substation (OnSS)	The Project's onshore HVAC substation, containing electrical equipment, control buildings, lightning protection masts, communications masts, access, fencing and other associated equipment, structures or buildings; to enable connection to the National Grid
Outer Dowsing Offshore Wind (ODOW)	The Project.
Order Limits	The area subject to the application for development consent. The limits shown on the works plans within which the Project may be carried out.
Pre-construction and post-construction	The phases of the Project before and after construction takes place.
Preliminary Environmental Information Report (PEIR)	The PEIR was written in the style of a draft Environmental Statement (ES) and provided information to support and inform the statutory consultation process during the pre-application phase.
The Project	Outer Dowsing Offshore Wind, an offshore wind generating station together with associated onshore and offshore infrastructure.
Project Design Envelope	A description of the range of possible elements that make up the Project's design options under consideration, as set out in detail in the project description. This envelope is used to define the Project for Environmental

Term	Definition
	Impact Assessment (EIA) purposes when the exact engineering parameters are not yet known. This is also often referred to as the “Rochdale Envelope” approach.
Receptor	A distinct part of the environment on which effects could occur and can be the subject of specific assessments. Examples of receptors include species (or groups) of animals or plants, people (often categorised further such as ‘residential’ or those using areas for amenity or recreation), watercourses etc.
Statutory consultee	Organisations that are required to be consulted by the Applicant, the Local Planning Authorities and/or The Planning Inspectorate during the pre-application and/or examination phases, and who also have a statutory responsibility in some form that may be relevant to the Project and the DCO application. This includes those bodies and interests prescribed under Section 42 of the Planning Act 2008.
Study Area	Area(s) within which environmental impact may occur – to be defined on a receptor-by-receptor basis by the relevant technical specialist.
Transboundary Effects	Transboundary effects arise when impacts from the development within one European Economic Area (EEA) state affects the environment of another EEA state(s)
Transition Joint Bay (TJB)	The offshore and onshore cable circuits are jointed on the landward side of the sea defences/beach in a Transition Joint Bay (TJB). The TJB is an underground chamber constructed of reinforced concrete which provides a secure and stable environment for the cable.
Trenchless technique	Trenchless technology is an underground construction method of installing, repairing and renewing underground pipes, ducts and cables using techniques which minimize or eliminate the need for excavation. Trenchless technologies involve methods of new pipe installation with minimum surface and environmental disruptions. These techniques may include Horizontal Directional Drilling (HDD), thrust boring, auger boring, and pipe ramming, which allow ducts to be installed under an obstruction without breaking open the ground and digging a trench.

Reference Documentation

Document Number	Title
6.3.27.1	Transport Assessment
6.1.3	Human Health Chapter
6.3.5.3	Transboundary Screening Matrices
6.1.4	Site Selection and Consideration of Alternatives
8.1.5	Outline Surface Water and Drainage Strategy
6.1.6	Technical Consultation
6.1.19	Onshore Air Quality
8.15	Outline Construction Traffic Management Plan
8.16	Outline Travel Plan
8.17	Outline Public Access Management Plan
6.1.26	Noise and Vibration

27 Traffic and Transport

27.1 Introduction

1. This chapter of the Environmental Statement (ES) presents the Environmental Impact Assessment (EIA) process and results for the potential impacts of Outer Dowsing Offshore Wind (“the Project”) on Onshore Traffic and Transport. Specifically, this Chapter considers the potential impact of the Project from the mean low water spring (MLWS) landfall, along the Onshore Export Cable Corridor (ECC), and incorporating the Onshore Substation (OnSS) during the construction, operation and maintenance, and decommissioning phases.
2. GT R4 Limited (trading as Outer Dowsing Offshore Wind) hereafter referred to as the 'Applicant', is proposing to develop the Project. The Project will include both offshore and onshore infrastructure including an offshore generating station (windfarm) located approximately 54km from the Lincolnshire coastline, export cables to landfall, onshore cables, an onshore substation, connection to the electricity transmission network, and ancillary and associated development (see Volume 1, Chapter 3: Project Description 6.1.3 for full details).
3. The Onshore Export Cable Corridor (ECC) route is between Wolla Bank (landfall) and the Surfleet Marsh Onshore Substation (OnSS), with a length of circa 70km and the 400kV cable corridor to the National Grid connection point at Weston Marsh with a length of circa 4km and is assessed in this chapter.
4. This chapter includes the following technical appendix:
 - Volume 3, Appendix 27.1 Transport Assessment (document reference 6.3.27.1).
5. This chapter is also supported by the following outline documents which have been submitted alongside this ES:
 - Document 8.15: Outline Construction Traffic Management Plan (Outline CTMP) (document reference 8.15);
 - Document 8.16: Outline Travel Plan (Outline TP) (document reference 8.16); and
 - Document 8.17: Outline Public Access Management Plan (Outline PAMP) (document reference 8.17).
6. This chapter should be read alongside the following ES chapters:
 - Volume 1, Chapter 3: Project Description (document reference 6.1.3);
 - Volume 1, Chapter 19: Onshore Air Quality (document reference 6.1.19); and
 - Volume 1, Chapter 26: Noise and Vibration (document reference 6.1.26).

27.2 Statutory and Policy Context

7. The relevant legislation and planning policy for offshore renewable energy NSIPs, specifically in relation to traffic and transport, is outlined in the sections below and in Table 27.1.

27.2.1 National Policy Statements

8. The assessment of the potential Traffic and Transport impacts of the onshore elements of the Project has been made with reference to the UK Government's National Policy Statements (NPSs). Key policies for Traffic and Transport are listed in Table 27.1 and identifies where these are addressed within this chapter.
9. NPSs set out policies or circumstances that the UK Government considers should be considered in decisions on Nationally Significant Infrastructure Projects (NSIPs).
10. The NPS relevant to the Project is Overarching NPS EN-1 (DESNZ, 2023a) only for Traffic and Transport.

27.2.2 National Planning Policy Framework (2021)

11. The latest National Planning Policy Framework (NPPF) was published in December 2023 by the Ministry of Housing, Communities and Local Government, replacing the previous versions published in 2012, 2018, 2019 and 2021. The NPPF sets out the government's planning policies for England and how these are expected to be applied. At the heart of NPPF is a presumption in favour of sustainable development.
12. The NPPF has no formal standing in the DCO process. Notwithstanding this, when making decisions on Nationally Significant Infrastructure Project (NSIP) applications, the Planning Inspectorate may consider NPPF.
13. The key policies for Traffic and Transport are listed in Table 27.1, which identifies where these are addressed within this chapter (where relevant).

27.2.3 Regional and Local Planning Policy

14. The study area lies across the following districts: East Lindsley, Boston and South Holland. Relevant local policy for these districts has been consulted, with Table 27.1 providing details contained within which are pertinent to traffic and transport.

Table 27.1: National, Regional and Local Policy Context

Legislation/Policy	Key provisions	Section where legislation or policy addressed
NPS EN-1	<p>Paragraph 5.14.5 states:</p> <p><i>“If a project is likely to have significant transport implications, the applicant’s ES should include a transport appraisal.”</i></p>	<p>This chapter of the ES has been produced in accordance with current transport guidance and this is evidenced throughout.</p> <p>The Transport Assessment is provided at Volume 3, Appendix 27.1 (document reference 6.3.27.1).</p>
NPS EN-1	<p>Paragraph 5.14.6 states:</p> <p><i>“National Highways and Highways Authorities are statutory consultees on NSIP applications including energy infrastructure where it is expected to affect the strategic road network and / or have an impact on the local road network. and applicants should consult with National Highways and Highways Authorities as appropriate on the assessment and mitigation to inform the application to be submitted.”</i></p>	<p>The Project is only predicted to have an impact on the local highway network, which is maintained by Lincolnshire County Council (LCC), who have been consulted with throughout the preparation of the DCO application for matters relating to traffic and transport.</p> <p>Whilst the Project is not expected to have an impact on the Strategic Highway Network (SRN), National Highways (NH) has been consulted with throughout the preparation of the DCO application for matters relating to traffic and transport.</p>
NPS EN-1	<p>Paragraph 5.14.7 states:</p> <p><i>“The applicant should prepare a travel plan including demand management measures to mitigate transport impacts. The applicant should also provide details of proposed measures to improve access by active, public and shared transport to:</i></p> <ul style="list-style-type: none"> ▪ <i>reduce the need for parking associated with the proposal;</i> ▪ <i>contribute to decarbonisation of the transport network; and</i> ▪ <i>improve user travel options by offering genuine modal choice”.</i> 	<p>Section 27.6.4 outlines the embedded traffic and transport mitigation measures for the construction phase of the Project, such as the Outline TP (document reference 8.16), which will include demand management measures to be adopted.</p>

Legislation/Policy	Key provisions	Section where legislation or policy addressed
NPS EN-1	<p>Paragraph 5.14.8 states:</p> <p><i>“The assessment should also consider any possible disruption to services and infrastructure (such as road, rail and airports).”</i></p>	<p>Section 27.8 sets out the assessment of the likely effects on the roads within the study area as a result of the construction phase of the Project.</p> <p>An analysis of the use of these level crossings is provided in Section 7.0 of the Volume 3, Appendix 27.1 (document reference 6.3.27.1). The construction vehicles associated with the construction of the Project would not cross any railway bridges with weight restrictions or under any bridges with low clearance. Some vehicles will be required to use the level crossings on the A52 to the east of Croft, on Brewster Lane and on Station Road, Eastville.</p> <p>The Applicant has had discussions with Network Rail (NR) regarding the proposals and has signed a Basic Asset Protection Agreement (BAPA).</p> <p>The BAPA is used by NR for projects that have a low risk of impacts to the railway and commits the Applicant to carry out the works in accordance with NR’s procedures which ensure that no disruption will occur. Therefore it has been concluded that no likely significant effects would occur, and disruption to the railway is as such not considered in this chapter.</p>

Legislation/Policy	Key provisions	Section where legislation or policy addressed
NPS EN-1	<p>Paragraph 5.14.11 states:</p> <p><i>“Where mitigation is needed, possible demand management measures must be considered. This could include identifying opportunities to:</i></p> <ul style="list-style-type: none"> ▪ <i>reduce the need to travel by consolidating trips;</i> ▪ <i>locate development in areas already accessible by active travel and public transport;</i> ▪ <i>provide opportunities for shared mobility;</i> ▪ <i>re-mode by shifting travel to a sustainable mode that is more beneficial to the network;</i> ▪ <i>retime travel outside of the known peak times; and</i> ▪ <i>reroute to use parts of the network that are less busy.”</i> 	<p>Section 27.6.4 outlines the embedded traffic and transport mitigation measures for the construction phase of the Project, such as the Outline TP (document reference 8.16), which will include demand management measures to be adopted.</p>
NPS EN-1	<p>Paragraph 5.14.14 states:</p> <p><i>“The Secretary of State may attach requirements to a consent where there is likely to be substantial HGV traffic that:</i></p> <ul style="list-style-type: none"> ▪ <i>control numbers of HGV movements to and from the site in a specified period during its construction and possibly on the routing of such movements;</i> ▪ <i>make sufficient provision for HGV parking, and associated high quality driver facilities either on the site or at dedicated facilities elsewhere, to support driver welfare, avoid ‘overspill’ parking on public roads, prolonged queuing on approach roads and uncontrolled on-street HGV parking in normal operating conditions; and</i> 	<p>The assessment of the increases in heavy goods vehicles (HGVs) associated with the construction phase of the Project is set out in Section 27.8. Any impacts of increases in HGVs are further reduced by the types of traffic management measures that would be implemented as set out in the Outline CTMP (document reference 8.15) and mitigation such as schemes of passing places that are proposed (Annex N of the Volume 3, Appendix 27.1 (document reference 6.3.27.1) and therefore considered to be an acceptable impact.</p> <p>The Outline CTMP (document reference 8.15) states that no parking will be permitted on public roads.</p>

Legislation/Policy	Key provisions	Section where legislation or policy addressed
	<ul style="list-style-type: none"> ensure satisfactory arrangements for reasonably foreseeable abnormal disruption, in consultation with network providers and the responsible police force.” 	<p>The Outline CTMP (document reference 8.15) states that the appropriate authorities and emergency services will be consulted regarding HGV movements during the construction of the Project.</p>
NPS EN-1	<p>Paragraph 5.14.16 states:</p> <p><i>“Applicants should consider the DfT policy guidance “Water Preferred Policy Guidelines for the movement- of- abnormal-indivisible loads” when preparing their application”</i></p>	<p>The Applicant would endeavour to identify the closest port to the study area for the delivery of the abnormal indivisible loads (AILs) required for the Project to minimise the movement of these on the highway network.</p>
NPS EN-1	<p>Paragraph 5.14.21 states:</p> <p><i>“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.”</i></p>	<p>The assessment of road safety in relation to the additional traffic associated with the construction phase of the Project is set out in Section 27.8.1.4.</p> <p>It is concluded that there are no significant road safety effects, with any impacts further reduced by the types of traffic management measures that would be implemented as set out in the Outline CTMP (document reference 8.15) and therefore considered to be an acceptable impact.</p> <p>The cumulative impact assessment is set out in Section 27.9.</p>
NPPF	<p>Paragraph 114 states that in assessing applications for development, it should be ensured that:</p> <p><i>“a) appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location.</i></p>	<p>Section 27.6.4 outlines the embedded traffic and transport mitigation measures for the construction phase of the Project, such as the Outline TP (document reference 8.16), which will include demand management measures to be adopted.</p>

Legislation/Policy	Key provisions	Section where legislation or policy addressed
	<p><i>b) safe and suitable access to the site can be achieved for all users;</i> <i>c) the design of streets, parking areas, other transport elements and the content of associated standards reflects current national guidance, including the National Design Guide and the National Model Design Code; and</i> <i>d) any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree.”</i></p>	
NPPF	<p>Paragraph 115 states that:</p> <p><i>“development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe.”</i></p>	<p>An analysis of the construction vehicles forecast for the Project has been undertaken, including the consideration of movements in the peak periods on the local road network (LRN) as set out in Volume 3, Appendix 27.1 (document reference 6.3.27.1) and in Section 27.6.1.1 in this chapter.</p> <p>The assessment of road safety in relation to the additional traffic associated with the construction phase of the Project is set out in Section 27.8.1.4.</p> <p>The cumulative impact assessment is set out in Section 27.9.</p>
NPPF	<p>Paragraph 117 states that:</p> <p><i>“all developments that will generate significant amounts of movement should be required to provide a travel plan, and the application should be supported by a transport statement or transport assessment so that the likely impacts of the proposal can be assessed.”</i></p>	<p>Section 27.6.4 outlines the embedded traffic and transport mitigation measures for the construction phase of the Project, such as the Outline TP (document reference 8.16), which will include demand management measures to be adopted.</p>

Legislation/Policy	Key provisions	Section where legislation or policy addressed
<p>South-East Lincolnshire Local Plan 2011 – 2036</p> <p>Adopted March 2019</p>	<p><i>“Policy 2: Development Management Proposals requiring planning permission for development will be permitted provided that sustainable development considerations are met, specifically in relation to:</i></p> <ul style="list-style-type: none"> ▪ <i>Access and vehicle generation levels.”</i> <p><i>“Policy 33: Delivering a More Sustainable Transport Network To demonstrate compliance with this policy, a Transport Assessment and associated Travel Plan should be submitted with proposals.”</i></p>	<p>Section 27.6.4 outlines the embedded traffic and transport mitigation measures for the construction phase of the Project, such as the Outline TP (document reference 8.16), which will include demand management measures to be adopted.</p>
<p>Lincolnshire Network Management Plan</p> <p>April 2018</p>	<p><i>“key aims to facilitate the objectives of the Network Management Plan are:</i></p> <ul style="list-style-type: none"> ▪ <i>Safeguarding the quality and effectiveness of highways as the major transport network;</i> ▪ <i>Developing a consistent and appropriate implantation of regulations. Fairly balancing the legitimate needs of road users and works promoters of all types;</i> ▪ <i>Identifying and promoting good practice to all aspects of traffic and works co-ordination;</i> ▪ <i>Maintaining an attitude of co-operation and pursuit of efficiency of operation of works, whilst remaining mindful of regulatory responsibilities;</i> ▪ <i>Managing the road network and maintaining quality with reduced budgets through use of innovative partnerships;</i> ▪ <i>Contribute to minimising carbon emissions from transport across the county; and</i> ▪ <i>Investing in Infrastructure and Provision of Services.”</i> 	<p>Section 27.6.4 outlines the embedded traffic and transport mitigation measures for the construction phase of the Project, such as the Outline TP (document reference 8.16), which will include demand management measures to be adopted.</p>

Legislation/Policy	Key provisions	Section where legislation or policy addressed
Boston Transport Strategy 2016 – 2036 Published 2016	<p><i>The aims of the Boston Transport Strategy considered pertinent to the Project are to:</i></p> <ul style="list-style-type: none"> ▪ <i>Reduce car usage for journeys wholly within Boston;</i> ▪ <i>Reduce delays for traffic on the A52/A16 corridor with safe facilities for vulnerable users;</i> ▪ <i>Improve public transport provision;</i> ▪ <i>Improve road safety for pedestrians and cyclists, especially near schools;</i> ▪ <i>Improve air quality in the designated AQMA; and</i> ▪ <i>Improve cycling and pedestrian management in the town centre.”</i> 	<p>Section 27.6.4 outlines the embedded traffic and transport mitigation measures for the construction phase of the Project, such as the Outline TP (document reference 8.16), which will include demand management measures to be adopted.</p> <p>Any impacts of increases in HGVs are reduced by the types of traffic management measures that would be implemented as set out in the Outline CTMP (document reference 8.15)</p>
East Lindsley Local Plan Core Strategy Adopted July 2018	<p>The East Lindsley Core Strategy lays down an overall spatial vision for the district up to 2031.</p> <p><i>Strategic Policy 27: Renewable and Low Carbon Energy</i></p> <p><i>Large-scale renewable and low carbon energy development, development for the transmission and interconnection of electricity, and infrastructure required to support such development, will be supported where their individual or cumulative impact is, when weighed against the benefits, considered to be acceptable in relation to:</i></p> <ul style="list-style-type: none"> ▪ <i>Highway safety.</i> <p><i>Strategic Policy 22: Transport and Accessibility</i></p>	<p>Section 27.6.4 outlines the embedded traffic and transport mitigation measures for the construction phase of the Project, such as the Outline TP (document reference 8.16), which will include demand management measures to be adopted.</p>

Legislation/Policy	Key provisions	Section where legislation or policy addressed
	<p><i>The Council will support accessibility and seek to reduce isolation in the District by:</i></p> <ul style="list-style-type: none"> ▪ <i>Supporting development which is shown to link with the existing road and public transport systems operating within the district;</i> ▪ <i>Large scale developments such as food retail units of 800sq. m and larger and 80 residential dwellings or more will be accompanied by a transport assessment and travel plan. The indicative thresholds for transport assessments can be found at Annex 3 of the Core Strategy; and</i> ▪ <i>Supporting development that gives pedestrian and cycle movements priority.</i> 	
<p>Supplementary Planning Guidance on Wind Energy</p> <p>Adopted March 2004</p>	<p><i>“This supplementary planning document sets out policies for the consideration of proposals for wind turbines and wind infrastructure within South Holland District.</i></p> <p><i>The guidance sets out the criteria against which applications for wind turbines will be assessed.</i></p> <p><i>This relates to:</i></p> <ul style="list-style-type: none"> ▪ <i>Traffic Generation and vehicular access.</i> <p><i>The district will have particular regard to the following:</i></p> <ul style="list-style-type: none"> ▪ <i>The measures that would be taken, both during and after construction, to minimise the impact of the development on local land use and residential amenity.</i> 	<p>Section 27.6.4 outlines the embedded traffic and transport mitigation measures for the construction phase of the Project, such as the Outline TP (document reference 8.16), which will include demand management measures to be adopted.</p> <p>Any impacts of increases in HGVs are further reduced by the types of traffic management measures that would be implemented as set out in the Outline CTMP (document reference 8.15).</p>

Legislation/Policy	Key provisions	Section where legislation or policy addressed
	<p><i>A full Schedule 2 Environmental Impact Assessment (EIA) will be required with all applications.”</i></p>	

27.3 Consultation

15. Consultation is a key part of the Development Consent Order (DCO) application process. Consultation regarding traffic and transport has been conducted through the following processes:

- Evidence Plan Process (EPP) including Expert Topic Group (ETG) meetings;
- EIA scoping process (ODOW, 2022);
- Bilateral engagement with relevant stakeholders;
- Section 47 consultation process (all public consultation phases including phase 1 and 1a); and,
- Section 42 consultation process (Phase 2 Consultation, the Autumn Consultation and the Targeted Winter Consultation).

16. An overview of the Project's consultation process with reference to technical considerations is presented within Volume 1, Chapter 6: Technical Consultation (document reference 6.1.6). Further information on the Project's consultation phases can be found in the Project's Consultation Report (document reference 5.1).

Table 27.2 Summary of Consultation Relating to Traffic and Transport

Date and consultation phase/type	Consultation and key issues raised	Section where comment addressed
<p>Scoping Opinion (the Planning Inspectorate, 9 September 2022) Comment ID: 3.20.1, Table 8.8.3</p>	<p>Traffic noise construction: The Planning Inspectorate agrees that this matter can be scoped out of the traffic and transport aspect chapter of the ES on the basis that it will be included in the Noise and Vibration ES chapter.</p>	<p>Noted.</p>
<p>Scoping Opinion (the Planning Inspectorate, 9 September 2022) Comment ID: 3.20.2, Table 8.3.3</p>	<p>Disruption to the railway - construction: Given the stage of the Proposed Development and the lack of information on where the cable route may cross railway infrastructure and the crossing methods that could be used, the Planning Inspectorate considers that there is insufficient evidence at this stage to scope this matter out of the assessment. The ES should include an assessment of disruption to the railway network, where likely significant effects could occur.</p>	<p>The construction vehicles associated with the construction of the Project would not cross any railway bridges with weight restrictions or under any bridges with low clearance.</p> <p>Some vehicles will be required to use the level crossings on the A52 to the east of Croft, on Brewster Lane and on Station Road, Eastville. An analysis of the use of these level crossings is provided in Section 7.0 of Volume 3, Appendix 27.1 (document reference 6.3.27.1).</p> <p>The Applicant has signed a BAPA. Therefore, it has been concluded that no likely significant effects would occur, and disruption to the railway is as such not considered in this chapter.</p>
<p>Scoping Opinion (the Planning Inspectorate, 9 September 2022) Comment ID: 3.20.3, Table 8.3.3</p>	<p>Any impacts during operation: The Planning Inspectorate agrees that it is unlikely that there would be a significant change in vehicle flows during O&M; therefore, significant traffic and transport effects during operation are unlikely to</p>	<p>An indication of operational and maintenance vehicle movements for the Project is provided in Section 27.6.1.9.</p>

Date and consultation phase/type	Consultation and key issues raised	Section where comment addressed
	<p>occur. However, the ES should confirm the anticipated road vehicle movements during O&M and demonstrate that these are below guidance thresholds for significant effects.</p>	
<p>Scoping Opinion (the Planning Inspectorate, 9 September 2022) Comment ID: 3.20.4, Table 8.3.3</p>	<p>Impacts during decommissioning: “The Scoping Report contains limited information with regards to decommissioning activities; however, on the basis of the information that the onshore cable is likely to be left <i>in situ</i> to avoid adverse effects on the environment and communities, and that activities would be similar to those during construction but in reverse and on a smaller scale, the Planning Inspectorate is of the view that significant impacts on traffic and transport during decommissioning can be scoped out of the assessment.</p>	<p>n/a</p>
<p>Scoping Opinion (the Planning Inspectorate, 9 September 2022) Comment ID: 3.20.5, Table 8.3.3</p>	<p>Cumulative traffic noise: The Scoping Report states that cumulative traffic noise will be addressed elsewhere in the ES and so will not also be considered in the traffic and transport assessment. The Planning Inspectorate agrees that this matter can be scoped out of the Traffic and Transport aspect chapter of the ES on the basis that a cumulative noise assessment will</p>	<p>n/a</p>

Date and consultation phase/type	Consultation and key issues raised	Section where comment addressed
	be included in the Noise and Vibration aspect chapter.	
Scoping Opinion (the Planning Inspectorate, 9 September 2022) Comment ID: 3.20.6, Table 83.3	Cumulative disruption to the railway: As noted at point 3.20.2 of this Opinion, the Planning Inspectorate cannot agree to scope out the potential effect of disruption to the railway at this stage. The ES should include an assessment of any significant cumulative effects from disruption to the railway.	The Applicant has signed a BAPA with NR. Therefore, it has been concluded that no likely significant effects would occur, and disruption to the railway is as such not considered in this chapter.
Scoping Opinion (the Planning Inspectorate, 9 September 2022) Comment ID: 3.20.7, Table 8.8.39	Transboundary effects: The Planning Inspectorate agrees that as effects are likely to be localised, transboundary traffic and transport effects are unlikely to occur; this matter can be scoped out of the assessment.	Noted.
Scoping Opinion (the Planning Inspectorate, 9 September 2022) (National Highways (NH))	National Highways: It is noted that any onshore ancillary equipment will be located 20 – 30 miles distant from the nearest link to the SRN, namely the A1 and A46 to the west and M180 to the north. As such the SRN will simply become a conduit for vehicular movements to/from the onshore sites/construction compounds. With this in mind it is unlikely that the proposal will have any adverse impact on the safe operation of the SRN.	Noted.

Date and consultation phase/type	Consultation and key issues raised	Section where comment addressed
<p>Scoping Opinion (the Planning Inspectorate, 9 September 2022) (Network Rail)</p>	<p>Network Rail: The EIA should consider the impact of the proposed development upon operational railway safety. This should include a transport assessment section considering the impact that HGV traffic/haulage routes associated with the construction and operation of the scheme may have on operational railway assets such as railway bridges with low clearance, bridges with weight restrictions and railway level crossings.</p>	<p>The construction vehicles associated with the construction of the Project would not cross any railway bridges with weight restrictions or under any bridges with low clearance. Some vehicles will be required to use the level crossings on the A52 to the east of Croft, on Brewster Lane and on Station Road, Eastville. An analysis of the use of these level crossings is provided in Section 7.0 of Volume 3, Appendix 27.1 (document reference 6.3.27.1).</p> <p>With regards to the trenchless crossing to install the cable under the railway under the railway, the Applicant has obtained a business clearance and technical clearance, and has entered into a Basic Asset Protection Agreement with NR. Therefore, no assessment of the potential disruption to the railway is undertaken in this chapter.</p>
<p>Scoping Opinion (the Planning Inspectorate, 9 September 2022) (LCC)</p>	<p>LCC: The scope set out in this Chapter is considered appropriate and it is agreed with the proposals for scoping in/scoping out (Table 8.8.2). Once the construction routes and vehicle estimates are more clearly defined, the next stage would be to determine the necessary mitigation in terms of junction upgrades, passing places, road widening, access points. Swept paths of</p>	<p>Specific mitigation on the construction vehicle access routes is set out in Section 7.0 of Volume 3, Appendix 27.1 (document reference 6.3.27.1). This includes potential widening (which will depend on the largest vehicle type required to use an access route) and schemes of passing places on local construction vehicle access routes. The potential mitigation to be implemented has been discussed and agreed in principle with LCC as part of the Evidence Plan process.</p>

Date and consultation phase/type	Consultation and key issues raised	Section where comment addressed
	proposed HGV routes may be necessary at key points on the network.	
Section 42 Consultation (July 2023) (LCC)	Overall, the methodology and assessment in the TA [Transport Assessment] is accepted, but it is still at a high level (there are still options being considered). It does not yet provide adequate detail that the Council would expect to support a typical outline planning application.	Volume 3, Appendix 27.1 (document reference 6.3.27.1) has been updated for the selected Onshore ECC route and provides the level of detail required for a typical outline planning application.
Section 42 Consultation (July 2023) (LCC)	Annex 07 of the TA includes the site construction access locations, but these are at present dots on the plans. Again, more detail will need to be provided in the form of access drawings, swept paths, visibility splays etc for us to be able to review and advise if satisfactory.	<p>The confirmed construction access locations are shown in Figure 27.3.1 to 27.3.9 of Volume 2, Chapter 27 (document reference 6.2.27.2), with a General Arrangement (GA) drawing of each access provided in Annex F of Volume 3, Appendix 27.1 (document reference 6.3.27.1) showing the visibility splays, based on 85th percentile speeds.</p> <p>Swept path analyses of the local construction vehicle access routes are provided in Annex A of Volume 3, Appendix 27.1 (document reference 6.3.27.1).</p>
Section 42 Consultation (July 2023; November 2023) (NH)	<p>It is unlikely that the traffic generated by this proposal both during the construction period nor when the site is fully operational, will adversely impact the SRN.</p> <p>That aside it is noted that a final Construction Traffic Management Plan (CTMP) will be submitted as part of the DCO application (Q1 2024). This should inform</p>	The Outline CTMP (document reference 8.15) submitted with the DCO application is an Outline version, as the final version would be prepared by the appointed Principal Contractor(s) post consent and prior to commencing construction works, which would be discussed with LCC and NH and agreed and approved by LCC.

Date and consultation phase/type	Consultation and key issues raised	Section where comment addressed
	<p>the vehicle trips that are likely to be generated during construction and the routes which are likely to be used.</p> <p>To understand the full traffic impacts of the proposal and to demonstrate that the SRN will not be impacted, the CTMP should:</p> <ul style="list-style-type: none"> ▪ Present the anticipated average two-way daily traffic numbers associated with the construction phase of the project (deliveries and construction staff vehicles). ▪ Provide an hourly breakdown of vehicle trips with a separate breakdown for the SRN peak hours, i.e.08:00-09:00 (AM peak hour) and 17:00-18:00 (PM peak hour). ▪ Provide details of arrangements for routing of construction vehicles to and from the site. ▪ Provide details of any special or abnormal deliveries or vehicular movements. It is noted that abnormal loads will normally be transported by sea and then utilise previously agreed routes by road – no impact on SRN. 	<p>The Outline CTMP (which has been updated from the version submitted with the PEIR) sets out the details required by NH.</p>

Date and consultation phase/type	Consultation and key issues raised	Section where comment addressed
	<ul style="list-style-type: none"> ▪ Provide site contact details for person(s) responsible for Health & Safety and handling of complaints. 	
Section 42 Consultation (July 2023) (Network Rail)	<p>In order to ensure that the scheme does not impact on operational railway safety, the developer must liaise closely with Network Rail Asset Protection to ensure that the haulage routes into the site are appropriate, and the design and construction of the new facility and associated infrastructure will not have an adverse impact on railway operations.</p> <p>It is therefore assumed that a condition of the Order would be that detailed specifications of the proposed scheme, its construction and traffic management plans are to be provided and agreed in writing before development can commence.</p>	Requirement 8 (detailed onshore design parameters) and requirement 20 (traffic) of the DCO Schedule 1 Part 3 (requirements) deal with these matters.
Section 42 Consultation (November 2023) (LCC)	Will the Transport Assessment have existing 2 way flows on all the links? Some of the daily flows seem to be quite large in total, especially on the A roads and it would be informative to know how much these compare with existing flows.	The baseline data is set out in Section 27.1 of Volume 3, Appendix 27.1 (document reference 6.3.27.1) and Section 27.4 of this Chapter noting in some cases, baseline data has been collected at one location only on a local construction vehicle access routes between the core construction vehicle access routes i.e. the A52/A16/A158 and the onshore cable corridor) representing the whole route.
Section 42 Consultation (November 2023)	I am concerned about the volume of traffic proposed through Boston on the A16 and	The forecast peak hour and daily construction traffic forecast to travel through Boston is set out in Volume 3,

Date and consultation phase/type	Consultation and key issues raised	Section where comment addressed
(LCC)	A52, whilst these are strategic A roads, they operate at capacity in most peak periods and additional traffic of the scale proposed in these tables could be a concern. The TA would need to consider % change due to the development impact, and possibly junction capacity assessments.	<p>Appendix 27.1 Transport Assessment (document reference 6.3.27), which also provides a justification for not requiring junction capacity assessments.</p> <p>The absolute and percentage change impacts of the Project construction traffic (including through Boston) are set out in Section 27.8 of this chapter.</p>
Section 42 Consultation (November 2023) (LCC)	With regard to the passing place drawings. In general, the proposals appear to show passing places in suitable places, sometimes using proposed existing accesses or junctions – it should be noted that some of the accesses would need upgrading as they appear not suitable currently.	The detailed design of the mitigation would be undertaken post consent and through discussions and agreement with LCC, as noted in Section 27.8 of Volume 3, Appendix 27.1 (document reference 6.3.27.1)/
Section 42 Consultation (November 2023) (LCC)	Again, if the existing base flows are provided as well as the development traffic it would be possible to better estimate if all the spaces are needed. I think some rural lanes might have low traffic flows and low development traffic such that spaces are not needed every 200m but less frequently.	The detailed design of the mitigation would be undertaken post consent and through discussions and agreement with LCC, as noted in Section 27.8 of Volume 3, Appendix 27.1 (document reference 6.3.27.1)

17. As identified in Volume 1, Chapter 3: Project Description (document reference 6.1.3) and Volume 1, Chapter 4: Site Selection and Alternatives (document reference 6.1.4) the Project design envelope has been refined for the DCO submission. This process has been influenced by stakeholder feedback.

27.4 Baseline Environment

27.4.1 Study Area

The Project’s Onshore ‘Order Limits’ are the area subject to the application for development consent. It comprises landfall, a typically 80m wide corridor (the Onshore ECC), the Onshore Substation (OnSS) and 400kV cables to the NGSS Connection Area.

18. The study area for the traffic and transport assessment has been informed by determining the most probable routes for traffic, for both the movement of materials, assumed to be HGVs and construction workers (assumed to be in a car or an LGV).
19. The study area incorporates probable routes for the construction, operational, and decommissioning phases of the Project and includes the non-motorised user (walkers, cyclists and horse-riders (WCH)) infrastructure and roads that would be impacted by the construction works associated with the Project (directly) The construction phase of the Project will generate higher levels of traffic than the operational and decommissioning phases and so definition of the study area is predominantly based on anticipated construction traffic volumes and routeing.
20. The extent of the study area has been presented during the Evidence Plan Process. The study area is described by a segment system in relation to the Order Limits, which are presented in Table 27.3.
21. The length of the Onshore ECC from the landfall to the Surfleet Marsh OnSS and 400kV cables to the NGSS Connection Area is approximately 70km and to allow for the assessments to be undertaken, the ECC has been split into the segments as outlined in Table 27.3 and shown in Figure 3.4 of Volume 2, Chapter 3 (reference 6.2.3.4).
22. This also includes ECC14 between the Surfleet Marsh OnSS and the Connection Area.

Table 27.3 Onshore ECC Segments

Segment	Starts	Ends
1	Landfall	A52 West of Hogsthorpe
2	A52 West of Hogsthorpe	Marsh Lane
3	Marsh Lane	A158
4	A158	Low Road
5	Low Road	Steeping River
6	Steeping River	Fodder Dike Bank/Fen Bank
7	Fodder Dike Bank/Fen Bank	Broadgate
8	Broadgate	Ings Drove
9	Ings Drove	Church End Lane
10	Church End Lane	The Haven

Segment	Starts	Ends
11	The Haven	Marsh Road
12	Marsh Road	Fosdyke Bridge
13	Fosdyke Bridge	Surfleet OnSS
14	Surfleet Marsh OnSS / Marsh Drove	Connection Area

27.4.2 Construction Vehicle Routeing

23. The highway links shown in Figure 27.1 of Table 27.4 Volume 2, Chapter 27 (document reference 6.2.27.1) comprise the core and local access routes that construction vehicles would use to access the Onshore ECC, OnSS and 400kV cable corridor to the NGSS Connection Area.

Table 27.4 Construction Vehicle Access Routes

Type	Highway Links	Segment
Core construction vehicle access routes	A1104, B1449	1
	A52 (requiring use of a level crossing east of Croft), A16, A17, A158, A1028, A1221	2 to 14
	Marsh Lane	3
	Gunby Lane, Mill Lane, B1195	5
Local construction vehicle access routes (from Marsh Lane)	South Ings Lane, Sloothby High Lane, Lистоft Lane	3
Local construction vehicle access routes (from the A52)	Rectory Road, Sea Road, Roman Bank	1 (Pre-construction and reinstatement works only)
	Low Road (via the Onshore ECC haul road)	4/5 (providing a route between the A52 and A158 to avoid Skegness)
	Boston Road, Mill Lane	5 (LGV only)
	Brewster Lane, Crow's Lane, Collision Gate, requiring use of a level crossing on Brewster Lane	5
	Ivy Lane, Low Road, Scald Gate	6 (LGV only)
	Low Road, Yawning Gate Road, Howgarth Lane	7
	Common Road	7/8
	West End Lane, Lowfields Road, Ings Road	8/9
	Cut End Road, Pinfold Lane (via the Onshore ECC haul road from the A52)	10
	Local construction vehicle access routes (from the A16)	Horbling Lane/Midville Road/Fodderdyke Lane/Station Road/Fen Bank (requiring use of a

Type	Highway Links	Segment
	level crossing on Station Road)/Burgh Road	
	Horbling Lane/Midville Road/Fodderdyke Lane/Station Road/Fen Bank (requiring use of a level crossing on Station Road)	7
	Millfield Lane East, Low Road, Streetway, Streetway/Wyberton Roads	11
	Station Road, Skeldyke Road, Nidd's Lane, Marsh Road	11/12
	Surfleet Bank	13
Local construction vehicle access routes (from the A17)	Wash Road, Craven's Lane	12
	Surfleet Bank	13
	Private Track, Marsh Road	14

27.4.3 Construction Vehicle Routeing - Summary

24. The above construction vehicle routes for the Project will be for HGVs and construction workers. It is acknowledged there may be some other local routes that will be used by construction workers to access the Onshore ECC and OnSS; however, given the forecast construction worker vehicle movements will be distributed across a wider number of highway links, the increases in traffic on these links will not result in any significant effects and will not be discernible in the daily fluctuations in baseline traffic.
25. Although construction traffic associated with the Project will use the wider highway network outside the study area (including the Strategic Road Network (SRN)), it is considered that construction traffic volume will have dissipated such that significant impacts on the wider highway network are not anticipated and so these wider routes are not included in the study area, which has been agreed with NH as set out in the Scoping Opinion (The Planning Inspectorate, 2022) and as further discussed and agreed through the Evidence Plan process and as set out by NH in the Section 42 response (July 2023).

27.4.4 Enabling Access Locations

26. In advance of the commencement of construction, and before the construction accesses have been formed, it will be necessary to take access to the ECC to carry out enabling works, also known as preparatory or early works (as described in Volume 1, Chapter 6.1.3). Access from the highway, for enabling works, will be taken from existing access points, typically using farm tracks, and will be used until the construction accesses have been formed. The enabling accesses are all existing access points and minimal or no improvements are required to make them suitable for use. The enabling accesses will be used for a range of pre-construction activities including:
- Ground Investigations;
 - Facilitating construction access and fencing;
 - Pre-construction drainage;
 - Hedgerow / vegetation clearance;
 - Ecological mitigation;
 - Archaeological investigations; and
 - Landscape planting.
27. At the end of the construction period, following the reinstatement of the construction accesses, it may be necessary to use the enabling accesses again for reinstatement works, including hedgerow and landscape planting and for plant used for reinstatement.
28. The use of the enabling accesses will be intermittent, short term, and will only be required when the construction accesses are not in place. The type of vehicles will typically be pickups, light farm vehicles and light construction plant, which would not breach thresholds for formal assessment under EIA Regulations. Therefore, these accesses are not assessed in this chapter.

29. The proposed enabling access locations are shown on Figure 3.4 of Volume 2, Chapter 3 (reference 6.2.3.4). Alternative enabling access locations will only be used subject to the agreement of LCC.
30. Table 27.5 outlines the maximum number of enabling accesses identified and the maximum duration that these would be utilised by the Project.
31. Following completion of construction and demobilisation, it may also be necessary to take access at the same points for vehicles required for reinstatement and planting works after the construction accesses have been removed. The type of vehicles involved would typically be four-wheel drive pickup trucks or ATVs and works would be expected to take place over one or two days at any location.

Table 27.5 Enabling Accesses

Parameters	Design Envelope
Maximum number of Enabling Accesses	Approximately 100 - 150
Maximum Duration (months)	2

27.4.5 Construction Access Locations

32. This section sets out the proposed construction access locations for Landfall, the OnSS and 400kV cables the NGSS Connection Area.
33. The proposed construction access locations are listed in Table 27.6 for each ECC segment and the 400kV cable corridor to the NGSS Connection Area (as described in Volume 1, Chapter 3 (document reference 6.1.3). The table shows the direction in which the access point provides access to the Order Limits where 'positive' refers to travel towards the OnSS and 'negative' refers to travel towards the landfall.
34. A description of the construction access locations (where there may also be a Temporary Construction Compound (TCC), the Onshore ECC segments and the 400kV cable corridor to the NGSS Connection Area is also provided in Volume 3, Appendix 27.1 (document reference 6.3.27.1) and shown in Figure 27.6.3 of Volume 2, Chapter 27 (document reference 6.2.27.3).
35. A GA (preliminary design, suitable for the DCO application) of each construction access (with the exception of AC51, AC-52 and AC-53 as these are existing accesses suitable for construction vehicles), is provided in the Annex F of the Transport Assessment (document reference 6.3.27.1).

Table 27.6 Construction Accesses

Access Reference	Location	ECC Segment	Direction
AC-01	Roman Bank	1	Positive (enabling, initial construction works phase and reinstatement works only)
AC-02	A52 West of Hogsthorpe	1	Negative
AC-03		2	Positive
AC-04	Listoft Lane	2	Negative
AC-05		2	Positive
AC-06	Sloothby High Lane	2	Negative
AC-07		2	Positive
AC-08	South Ings Lane	2	Negative
AC-09		2	Positive
AC-10	Marsh Lane	2	Negative
AC-11		3	Positive
AC-12	A158 (west of Skegness)	3	Negative
AC-13		4	Positive
AC-14	Low Road	4 ¹	Negative
AC-15	A52 (East of Croft)	5	Positive and Negative
AC-16	Church Lane	5	Negative
AC-17		5	Positive
AC-18	B1195 Wainfleet Road	5	Negative
AC-19		5	Positive
AC-20	Brewster Lane	5	Negative
AC-21		5	Positive
AC-22	Collision Gate	5	Negative
AC-23		5	Positive
AC-24	Mill Lane	5	Negative (LGV only)
AC-25	Scald Gate	6	Negative (LGV only)
AC-26		6	Positive (LGV only)
AC-27	Fen Bank	6	Negative
AC-28		6	Positive
AC-29	Howgarth Lane	7	Positive and Negative
AC-30	Common Road	7	Negative
AC-31		8	Positive
AC-32	Ings Road	8	Negative
AC-33		9	Positive
AC-34	A52	9	Negative
AC-35		9/10	Positive
AC-36	Cut End Road	10	Negative

¹ and route between A52 and A158 to avoid Skegness

Access Reference	Location	ECC Segment	Direction
AC-37		10	Positive
AC-38	Pinfold Lane	10	Positive and Negative
AC-39	Millfield Lane East	10	n/a
AC-40	Wyberton Roads	11	Negative
AC-41		11	Positive
AC-42	Marsh Road	11	Negative
AC-43		12	Positive
AC-44	Craven's Lane	12	Negative and Positive
AC-45	Wash Road	12	Negative
AC-46		12	Positive
AC-47	Surfleet Bank (A17)	13	Positive
AC-48	Surfleet Bank (A16)	13	n/a
AC-49	Marsh Road	14	n/a
AC-50		14	n/a
AC-51	A17/Private Track	14	n/a
AC-52	A17	12	n/a
AC-53	Private Track/Marsh Road	14	n/a

27.4.6 Other Highway Links

36. The study area also includes the roads that could be impacted should open trenching technology be utilised to install the Onshore ECC (i.e. where temporary lane or road closures may be required) and/or where there will be a haul road crossing, including some highway links that are also part of the construction vehicle routeing network.

37. The study area comprises the highway links shown in Table 27.7 that will be crossed by the Onshore ECC requiring a temporary lane or road closure and will have a haul road crossing (see Figure 27.3 of Volume 2, Chapter 27 (document reference 6.2.27.3)).

Table 27.7 Haul Road Crossings

Crossing Reference	Highway link	Segment
HC-01b	Ember Lane	1
HC-01	Langham Road	1
HC-02	Lowgate Road	1
HC-03	Moat Farm	3
HC-04	Ingoldmells Road	4
HC-05	Billgate Lane	4
HC-06	Middlemarsh Road	6
HC-07	Church Lane	6
HC-07b	Hall Gate	7
HC-08	Burgh Road	7
HC-09	Cranberry Lane	7
HC-10	Mill Hill	7

Crossing Reference	Highway link	Segment
HC-11	Skirmore Road	7
HC-12	Patman's Lane	7/8
HC-13	Ivery Lane	8
HC-14	Broadgate	8
HC-15	Cragmire Lane	8
HC-16	Manor Lane	8
HC-17	Seadyke Lane	8
HC-18	Church Road	8
HC-19	B1184	8
HC-20	Unnamed lane	8
HC-21	Pode Lane	8/9
HC-22	Skipmarsh Lane	9
HC-23	Southfields	9
HC-24	Ings Drove	9
HC-25	Double Bank	9
HC-26	Lowfields Lane	9/10
HC-26b	Foxhole lane	10
HC-27	Butterwick Road	10
HC-28	Shore Road	10
HC-29	Church End Road	11
HC-20	Clampgate Road	11
HC-31	Grovefield Lane	11
HC-32	Lane off Grovefield Lane	11
HC-33	Woad Lane	11
HC-34	Frampton Roads	12
HC-35	Sandholme Lane	12
HC-35b	Marsh Lane Track	12
HC-36	Pullover Lane	13
HC-37	Marsh Drove	13/14

38. Use of a trenchless crossing technique, which is not anticipated to require lane or road closures to install the cable has been confirmed for the following highway links as a minimum:

- A52;
- A158;
- A17;
- Youngers Lane;
- B1195;
- Fen Bank;
- B1184; and
- Scalp Road.

39. The other highway links listed in Table 27.7 might be crossed using a trenchless technique, following more detailed investigations. The assumption that the highway links that might be crossed using a trenchless technique are crossed using open trenching technology is a worst case, in terms of assessment in this chapter under EIA Regulations.

27.4.7 Public Rights of Way (PRoW)

40. In addition, the study area also includes all PRoW that are impacted by the construction works (those that might be crossed by the open trenching to install the cables, construction (temporary) or permanent vehicular access, Temporary Construction Compound (TCC) or haul road) for the Onshore ECC, as shown in Figure 27.4 of Volume 2, Chapter 27 (document reference 6.2.27.4) and as set out in the Outline PAMP (document reference 8.17).

27.4.8 Data Sources

41. A number of existing baseline data sources have been used to inform this chapter and the ongoing design of the Project, which are described in detail in the Transport Assessment (see Volume 3, Appendix 27.1 (document reference 6.3.27.1) and summarised below:

- A desktop appraisal of the traffic and transport aspects of the study area (Google Earth), supplemented by a number of visual route inspections;
- Annual Average Daily Traffic (AADT) flows and speed for the LRN (Department for Transport (DfT) National Road Statistics);
- STATS19 accident data for the LRN (LCC); and
- PRoW online map (LCC).

42. The new survey data that was collected to inform this assessment are:

- Automatic Traffic Counters (ATCs) at five locations across the study area to collect traffic flow and speed data during August 2022; and
- ATCs at 86 locations across the study area to collect traffic flow and speed data during either October 2022, February/March 2023 and December 2023. This includes the same five August 2022 ATC locations to enable a 'snapshot' comparison of the traffic flows in the study area as a result of tourism and agriculture in the summer months.

27.5 Existing Environment

27.5.1 Study Area

43. A detailed description of the highway network within the study area is provided in the Transport Assessment (see Volume 3, Appendix 27.1 (document reference 6.3.27.1)).

27.5.2 Traffic Flows – Original Data

44. An analysis of the traffic flows on the highway links within the study area (Average Daily Traffic (ADT), AADT and highway network peak hours) is provided in the Transport Assessment (see Volume 3, Appendix 27.1 (document reference 6.3.27.1)) and is summarised below.
45. The locations of the traffic data collected on the local highway network is shown on Figure 27.6.5 of Volume 2, Chapter 27 (document reference 6.2.27.5) (construction access vehicle routes).
46. The proposed highway links that are forecast to be affected by an increase in traffic as a result of the construction phase of the Project is set out in the following tables, which show the AADT or ADT (total and HGV) and HGV percentage of the data:
 - Table 27.8 Highway Links AADT (DfT Data, 2019)
 - Table 27.9 ATC ADT Data (October 2022);
 - Table 27.10 ATC ADT Data (February/March 2023); and
 - Table 27.11 ATC Data (December 2023)
47. The baseline data is shown in Figure 27.6.6 of Volume 2, Chapter 27 (document reference 6.2.27.6) (total vehicles) and Figure 27.6.7 of Volume 2, Chapter 27 (document reference 6.2.27.7) (HGVs).
48. ATC data was also collected in August 2022 on five highway links in the study area to enable an analysis of the difference in traffic flows to the October 2022 ATCs, as a result of tourism and agriculture in the summer. The August 2022 ATC data is set out in the Transport Assessment (document reference 6.3.27.1) and showed between 2.5% and 36.3% higher traffic flows compared to the October 2022 data.
49. On the A158, west of the A16, the AADT increased by 27% from 7,714 (total vehicles) to 9,798 (total vehicles), which is significantly below the theoretical daily capacity (two-way) for a single carriageway urban all-purpose road with frontage access and more than two side roads per kilometre², which is around 30,000 vehicles. Therefore, whilst there are some large increases in vehicle movements in the summer months, there is spare capacity to accommodate additional traffic, in theory.
50. The neutral month ATC data (October 2022, February & March 2023 and December 2023) data is used as a basis for the assessment as a robust assessment in terms of the percentage impacts of an increase in traffic.
51. It should be noted that in some cases, the ATC or DfT count data has been used to represent a number of highway links on the local construction vehicle access routes where baseline vehicles movements are expected to be of a similar magnitude.
52. No ATCs were installed on Surfleet Bank (for AC-47) or Surfleet Bank (for AC-48) as the local construction vehicle access routes only use a very short section of these roads.

² Table 2, DMRB TA 79/99 Traffic Capacity of Urban Roads, DfT, 1999

Table 27.8 Highway Links AADT (DfT Data, 2019³)

DfT Reference	Location Reference	Location	AADT		HGV (%)
			Total Vehicles	HGVs	
16524	17	A52 (Butterwick)	8,492	504	5.9
800874	28	Horbling Lane	1,333	173	13.0
16215	47	A17 (west of A1221)	23,548	3,025	12.8
57598	49	A1121	8,562	600	7.0
6227	51	A16 (north of A155)	9,634	730	7.8
81550	52	A16 (A158 to A1028)	5,515	486	8.8
6227	53	A16 (north of A1028)	8,928	611	6.8
7480	54	A1028	6,019	264	4.4
81151	55	A158 (A1028 to A16)	11,604	371	3.2
7996	58	A16 (Boston)	37,058	2,075	5.6
47946	59	A52 (Boston)	18,144	874	10.0

Table 27.9 ATC ADT Data (October 2022)

ATC Reference	Location Reference	Location	ADT		HGV (%)
			Total vehicles	HGVs	
1	18 and 19	A52 Wainfleet Road	12,096	440	3.6
2	50	A16 between A52 (Boston) and A155	7,042	314	4.5
3	56	A158 west of A16	8,033	303	3.8
4	57	A1104 north of B1149	4,615	192	4.2
5	4	A52 (west of Hogsthorpe)	3,987	534	13.4
6	3	A1104	7,168	1,159	16.2
7	2	B1449 Long Lane	2,530	468	18.5
8	1	B1449 Thurlby Road	4,243	766	18.1
9	5	A52 between Marsh Lane and Skegness	3,825	525	13.7
11	8	South Ings Lane	1,063	198	18.7
12	9 and 10	Marsh Lane	4,897	690	14.1
14	11 and 12	A158 Skegness Road (west of Skegness)	13,005	1,942	14.9
15	13 and 14	A52 (East of Croft/Wainfleet)	8,027	1,173	14.6
17	16	A52 (Wrangle)	6,355	1,337	21.0
22	37	Cut End Road	212	42	19.6
23	39	Wyberton Roads	213	33	15.3
24	40	Skeldyke Road	321	52	18.0
25	42 and 43	A16 (south of Boston)	22,100	3,798	17.2
26	46	A17 (north of the A16)	18,578	4,155	22.4
27	44 and 45	A17 (River Welland)	19,839	4,763	24.0
28	48	A16 (south of the A17)	16,270	4,895	30.1

³ 2019 data as the most recent dataset for the DfT counts in Table 27.8 avoiding the Covid-19 pandemic at the time of undertaking the assessment presented in this chapter

Table 27.10 ATC ADT Data (February/March 2023)

ATC Reference	Location Reference	Location	ADT		HGV (%)
			Total vehicles	HGVs	
30	21	Gunby Lane (south of the A158)	1,041	381	36.6
31	22	B1195 (Irby in the Marsh)	1,096	202	18.4
32	23	B1195 (Thorpe St Peter)	825	154	18.6
33	25	Brewster Lane	33	7	19.7
35	20	Church Lane	998	209	20.9
36	30	Mill Lane	488	34	6.9
38	24	B1195 Boston Road	1,277	216	16.9
44	27	Scald Gate	24	5	19.9
49	31	Howgarth Lane	122	16	12.9
52	32	Low Road	776	144	18.6
56	33	Common Road	223	38	17.2
58	34	Common Road (near the A52)	233	49	20.9
62	35	Ings Road	278	48	17.4
64	36	West End Road	557	135	24.3
76	41	Wash Road	213	26	11.8

Table 27.11 ATC Data (December 2023)

ATC reference	Location reference	Location	ADT		HGV (%)
			Total vehicles	HGVs	
77	60	Lincoln Road	10,052	138	1.4
78	61	Low Road, East of Croft	622	8	1.3
79	62	Marsh Road, Surfleet Bank	58	2	3.6
80	6	Listoft Lane	77	7	9.1
81	26	Collision Gate	8	0	0
82	38	Pinfold Lane	9	0	0

27.5.3 Road Safety

53. To understand the potential for a significant road safety effect as a result of the construction phase of the Project, it is necessary to establish a baseline and identify any inherent road safety issues within the onshore highway study area.

54. The review, which is provided in detail in Transport Assessment (see Volume 3, Appendix 27.1 (document reference 6.3.27.1) includes:

- Examining the rate of Personal Injury Accident (PIAs) per length of road in miles; and
- Identifying clusters to understand any patterns or trends, especially those involving HGVs and vulnerable road users (WCH).

27.5.3.1 Personal Injury Accidents

55. The analysis of PIA rates shows that the following highway links have a significantly higher accident rate than the national average (2022⁴), per billion vehicle miles:

- A52 between Hogsthorpe and Skegness;
- A16 in Boston;
- A52 in Boston
- A158 in Skegness;
- Mill Lane;
- Brewster Lane;
- Horbling Lane/Fodderdyke Road;
- Station Road/Fen Bank;West End Road/Lowfields Road;
- Millfield Road East/Low Road/Streetway/Wyberton Roads;
- Station Road/Skeldyke Road/Nidd's Lane/Marsh Road; and
- Wash Road/Craven's Lane

56. The analysis show that the following links have a marginally higher accident rate than the national average:

- A16 south of Boston;
- A52 north of Boston;
- B1449;
- A1104;
- Low Road (east of Croft)
- Marsh Lane;
- Gunby Lane;
- B1195 Wainfleet Road; and
- Low Road /Yawling Gate Road/Howarth Lane

57. The other highway links within the study area all have an accident rate similar to, or less than, the UK rate in 2022.

Clusters

58. A summary of the location of the PIA clusters (defined as three or more PIAs at the same location) on the highway links in the study area are:

- A17/A16 roundabout;

⁴ Reported road casualties in Great Britain: 2019 annual report, DfT (September 2020)

- A52/A16 Spalding Road roundabout;
- A16/B1397 roundabout;
- A16/A1138 signal controlled junction;
- A16/High Street left-in/left-out priority junction;
- A158/Gunby Lane junction;
- A17/B1397 staggered priority junction; and
- A158/Roman Bank signal-controlled junction.

27.5.4 Public Rights of Way

59. The PRoW (the majority of which are footpaths (with the exception of one bridleway and two Byways Open to All Traffic (BOAT)) within the study area that might be directly impacted by the construction of the Project (are described in the Volume 3, Appendix 27.1 (document reference 6.3.27.1). A summary of the PRoW and their relationship to the Project is provided in Table 27.12 and illustrated in Figure 27.4 of Volume 2, Chapter 27 (document reference 6.2.27.4)

Table 27.12 PRoW Relevant to the Project⁵

PRoW	Onshore ECC Segment	Starts	Ends	Relationship to the Project
Ande/19/1	1	Sea Road	Ande/19/2	Would cross a temporary duct storage compound
Ande/19/2	1	Roman Bank	Ande/19/2 and Ande/19/3	Would be crossed by haul road/Cable trenches and temporary duct storage area
Ande/19/3	1	Ande/19/1 and Ande/19/2	Chap/19/5	Would be crossed by haul road/and would cross a Cable Installation Compound (CIC) and temporary duct storage area
Chap19/2	1	Chap/21/4	Ande/19/3	Would be crossed by haul road
Chap21/4	1	Ember Lane	Chap19//2	Would be crossed by haul road
Chap/1180/1	1	Ember Lane	Stones Lane	
Hogs/1181/1	1	Ember Lane	Workhouse Lane	
Hogs/57/1	1	Lowgate Farm	Hogs/58/2 and Hogs/58/5	Would be crossed by haul road
Hogs/58/2	1	Hogs/58/1	Hogs/57/1 and Hogs/58/5	Would be crossed by haul road and cable trenches
Hogs/48/1	2	Private Track to Stackholme End	Addl/48/1 and Addl/49/1	Could be crossed by cable trenches
BurM/265/2	3	Skegness Road (Burgh le Marsh)	Middlemarsh Road and BurM/265/1	Would be crossed by haul road
BurM/260/1	4	A158 Skegness Road	Middlemarsh Road	Would be crossed by enabling works access
BurM/261/3	4	Middlemarsh Road	BurM/261/2, BurM/263/1 and BurM/264/1	Would be crossed by haul road
BurM/263/2	4	BurM/261/3	Middlemarsh Road	Would be crossed by enabling works access, CIC, haul road and cable trenches

⁵ Additional PRoW above trenchless works for Fish/12/2, Fish/11/5, Fish/13/11, Wybe/8/5, Fosd/8/1, Fosd/2/2, Surf/3/4, Surf/8/2 and Wstn/6/2 where there would be no impact

PRoW	Onshore ECC Segment	Starts	Ends	Relationship to the Project
Crof/264/1	5	Crof/264/3	A52	Would be crossed by haul road, could be crossed by cable trenches and would be crossed by enabling works access.
Crof/276/4	5	Crof/276/2	Church Lane	Would be crossed by haul road and cable trenches
Crof/276/2	5	Crof/276/3	Croft Road	Would be crossed by cable trenches
Croft/276/3	5	Church Lane	Crof/276/2	Would be crossed by haul road and cable trenches
WStM/371/1	6	WStM/370/1	Low Road	Would be crossed by haul road and cable trenches
Fish/12/2	10	Cut End Road and Fish/12/1	Fish/14/1 and Fish/12/3	The potential impact would be from an increase in vehicles at the crossing at Cut End Road.
Fish/11/5	10	Cut End Road and Fish/11/4	Fish/13/12 and Fish/11/6	Would be crossed by AC-40 and AC-41.
Wybe/2/4	11	Crawford's Farm, Wybe/2/2 and Wybe/8/4	Wybe/2/5 and Wybe/8/7	Would be crossed by haul road.
Kirt/1/5	12	Clough Lane/Seadyke Cottage	Hundred Acre Farm/Kirt/1/4 and Kirt/2/5	Would be crossed by haul road.
Fosd/8/1	12	Low Mill Lane	Fosd/4/1 and Fosd/4/2	Would be crossed by enabling access. Would be crossed by AC-44
Fosd/7/1	12	A17	Moul/6/1	Would be shared with construction access
Fosd/2/2	13	Fosd/2/1	Alga/8/2	Would be crossed by haul road.
Fosd/2/1	13	Surfleet Bank	Fosd/2/2	Shared with a construction access and is part of the Macmillan Way.

PRoW	Onshore ECC Segment	Starts	Ends	Relationship to the Project
Fosd/3/1	13	Fosd/2/1	Alga/9/1	Shared with a construction access and is part of the Macmillan Way.
Alga/9/1	13	Fosd/3/4	Fosd/3/1	Shared with enabling access
Alga/10/1	14	Fosd/6/1	Surf/8/1	Adjacent to access route using private track – no impact
Surf/8/1	14	Surf/8/2	Alga/10/1	
Fosd/6/1	14	A17	Alga/10/1	Small section shared with construction access vehicle route
Surf/9/1	14	Old Sea Bank	Marsh Road/Wstn/4/1	Shared with construction access vehicle route

27.5.5 Future Baseline

60. The background traffic on the highway links in the study area may increase between the baseline and the anticipated years of construction of the Project.

27.5.5.1 Baseline Year 2027

61. The Trip End Model Presentation Program (TEMPRO) database, which determines background traffic growth on an annual basis for a specified time period, has been used to factor the 2019, 2022 and 2023 data (Table 27.8 to Table 27.11) Table 27.11 to an estimated construction start year of 2027.
62. A traffic growth rate has been applied to the observed traffic flows in Table 27.8 to Table 27.11 using the DfT software TEMPRO to create base 2027 traffic flows.
63. The TEMPRO software presents the output of the DfT's National Trip End Model which forms part of the National Transport Model (NTM). The DfT's Webtag guidance Unit 3.15.2 advises the use of NTM in preference to the National Road Traffic Forecasts (NRTF) as the NTM data is based on a more up-to-date model.
64. The TEMPRO factors are:
- A Roads
 - 2019 to 2027 - 1.0627;
 - 2022 to 2027 - 1.0413; and
 - 2023 to 2027 – 1.0377.
 - Minor Roads
 - 2019 to 2027 - 1.0657;
 - 2022 to 2027 - 1.0401; and
 - 2023 to 2027 – 1.0321.
65. The 2027 ADT/AADT flows are shown in in Figure 27.6.8 of Volume 2, Chapter 27 (document reference 6.2.27.8) (total vehicles) and in Figure 27.6.9 of Volume 2, Chapter 27 (document reference 6.2.27.9) (HGVs).

Table 27.13 2027 AADT/ADT – Highway Links

ATC/DfT Reference	Location Reference	Highway link	ADT/AADT		HGV (%)
			Total Vehicles	HGVs	
8	1	B1449 Thurlby Road	4,419	120	2.7
7	2	B1449 Long Lane	2,635	91	3.5
6	3	A1104	7,464	246	3.3
5	4	A52 (west of Hogsthorpe)	4,151	90	2.2
9	5	A52 between Marsh Lane and Skegness	3,983	117	2.9
80	6	Listoft Lane	80	7	9.1
10	7	Sloothby High Lane	1,556	36	2.3
11	8	South Ings Lane	1,105	21	1.9
12	9	Marsh Lane (east of AC-10/AC-11)	5,094	110	2.1
12	10	Marsh Lane (west of AC-10/AC-11)	5,094	110	2.1
14	11	A158 Skegness Road (east of AC-12/AC-13)	13,542	313	2.3
14	12	A158 Skegness Road (west of AC-12/AC-13)	13,542	313	2.3
15	13	A52 (north of Low Road)	8,359	177	2.1
15	14	A52 (south of Low Road)	8,359	177	2.1
53	15	A52 (Holland Lane)	5,035	199	3.9
17	16	A52 (Wrangle)	6,618	290	4.4
DfT 16524	17	A52 (Butterwick)	9,051	537	5.9
1	18	A52 Wainfleet Road (west of AC-34/AC-35)	12,096	440	3.6
1	19	A52 Wainfleet Road (east of AC-34/AC-35)	12,096	440	3.6
35	20	Church Lane	1,038	27	2.6
30	21	Gunby Lane	1,082	49	4.5
31	22	B1195 (Irby in the Marsh)	1,140	33	2.9
32	23	B1195 (Thorpe St. Peter)	859	21	2.4
38	24	Boston Road (Wainfleet)	1,328	43	3.2
33	25	Brewster Lane	35	1	2.6
81	26	Collision Gate	9	0	n/a
43	27	Scald Gate	26	1	3.5
DfT 800874	28	Horbling Lane	1,417	184	13.0
41	29	Fen Bank	673	23	3.4
36	30	Mill Lane	507	12	2.3
49	31	Howgarth Lane	127	2	1.3
52	32	Low Road	807	33	4.0
56	33	Common Road	232	7	3.1
58	34	Common Road (near A52)	243	5	2.1
62	35	Ings Road	289	11	3.9

ATC/DfT Reference	Location Reference	Highway link	ADT/AADT		HGV (%)
			Total Vehicles	HGVs	
64	36	West End Road	579	60	10.3
22	37	Cut End Road	221	10	4.4
82	38	Pinfold Lane	9	0	n/a
23	39	Millfield Lane to Wyberton Roads	222	8	3.6
24	40	Station Road to Marsh Road	334	10	3.0
76	41	Wash Road/Craven's Lane	222	5	2.3
25	42	A16 (north of AC-37 East)	23,012	904	3.9
25	43	A16 (south of AC-37 East)	23,012	904	3.9
27	44	A17 (south of River Welland)	19,638	1,799	9.2
27	45	A17 (north of River Welland)	19,638	1,799	9.2
26	46	A17 (between A16 and A1121)	18,229	1,926	10.6
DfT 16215	47	A17 (west of A1221)	25,097	3,224	12.8
28	48	A16 (south of A17)	16,942	1,711	10.1
DfT 57598	49	A1121 between Boston and A17	9,125	639	7.0
2	50	A16 between A52 (Boston) and A155	7,042	314	4.5
DfT 6227	51	A16 between A155 and A158	9,980	778	7.8
DfT 81150	52	A16 between A158 and A1028	5,878	518	8.8
DfT 6227	53	A16 north of A1028/A1104	9,515	651	6.8
DfT 7480	54	A1028 between A158 and A16	6,415	281	4.4
DfT 81151	55	A158 between A1028 and A16	12,367	395	3.2
3	56	A158 west of A16	8,033	303	3.8
4	57	A1104 north of B1149	4,615	192	4.2
DfT 7996	58	A16 Boston	39,495	2,211	5.6
DfT 47946	59	A52 Boston	19,337	696	3.6
77	61	Lincoln Road Skegness	9,111	910	10.0
78	62	Low Road (east of Croft)	622	8	1.3
79	63	Marsh Road (Surfleet Bank)	58	2	3.6

27.6 Basis of Assessment

27.6.1 Scope of Assessment

66. The assessment of traffic and transport and the potential traffic impacts in relation to the Project has been undertaken with reference to the following key guidance documents:

- Ministry for Levelling Up, Housing and Communities (MLHC), Planning Practice Guidance - Overarching Principles on Travel Plans, Transport Assessments and Statements, 2014);
- Institute of Environmental Management and Assessment (IEMA), Guidelines for Environmental Assessment of Road Traffic (GEART)⁶, 1993;
- Institute of Environmental Management and Assessment (IEMA) Guidelines: (2023), Environmental Assessment of Traffic and Movements (referred to as ‘the IEMA Guidelines or GEATM’); and
- Design Manual for Roads and Bridges (DMRB), LA 112 Population and Human Health.

67. The MLHC guidance sets out how the transport impacts of a proposed development on the highway and public transport networks should be assessed within a Transport Assessment. The MLHC guidance also states that a Transport Assessment should include measures to promote sustainable travel through the preparation of a Travel Plan and identify mitigation measures to address any impacts. These are also the requirements for assessment as set out in the NPS EN-1 and therefore the assessment will take account of this guidance.

68. GEATM has recently replaced GEART⁷, which considers the same effects, broadly; however, GEATM provides some changes to the method of assessment in that it has a greater focus on applying professional judgement than simply applying rigorous percentage impact thresholds. The additional guidance in GEATM has been considered alongside GEART for the assessment.

69. As set out in the Scoping Report, the following factors have been identified as being the most discernible potential environmental effects likely to arise from changes in traffic movements. These are considered in the assessment as potential effects which may arise from changes in traffic flows resulting from the Project and have been scoped into this assessment for the construction phase only.

- Driver severance and delay - the potential delays to existing drivers and their potential severance from other areas;
- Community severance – the potential severance to communities and the delays to movements between communities;
- Vulnerable road users and road safety – the potential effect on the safety of users of the road, particularly pedestrians and cyclists;

⁶ This is included as the Planning Inspectorate Scoping response informing this chapter is based on the scope proposed using GEART, which was the current guidance at that time.

⁷ This is included as the Planning Inspectorate Scoping response informing this chapter is based on the scope proposed using GEART, which was the current guidance at that time.

- Pedestrian Amenity - the relative pleasantness of a journey affected by traffic flow, traffic composition, footway width and separation from traffic;
- Dust and Dirt - The potential effect of dust, dirt and other detritus being brought onto the road; and
- AILs - the potential effect on road users and local residents and users of the highway network caused by the movement of AILs.

27.6.1.1 Driver Severance and Delay

70. GEATM notes that the driver delays are only likely to be significant when the traffic on the network surrounding the development is already at, or close to, the capacity of the system.
71. GEATM recommends the use of proprietary software packages to model junction delay and therefore estimate increased vehicle delays. However, it is noted that vehicle delays are only likely to be significant when the surrounding highway network is at, or close to, capacity.
72. During consultation with LCC, whilst no specific sensitive junctions have specifically been identified that would automatically require an assessment of potential delays for drivers during periods when baseline traffic flows are at their greatest (the highway peak hours), the route through Boston on the A16 was highlighted for specific consideration of the increase in traffic associated with the Project.
73. As discussed during ETG meetings, 30 two-way vehicle movements on an approach arm to a junction is typically the threshold for the consideration of the requirement to undertake a junction capacity assessment, primarily if a junction has known existing capacity issues. Based on the information provided to LCC during the preparation of the ES, LCC confirmed that no capacity assessments are required to support the DCO application.
74. For the potential delay to users of the highway links that may require a temporary closure to enable open trenching technology to be utilised for the Onshore ECC, the assessment is based on the relative importance of each link and the availability of an alternative route, using professional judgement.

27.6.1.2 Community Severance

75. 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.
76. 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 effects could equally be applied to residents, motorists, cyclists or pedestrians.
77. GEATM suggests that changes in total traffic flow of 30%, 60% and 90% are considered to be slight, moderate and substantial respectively. However, GEATM states that these figures should be used cautiously, and the assessment should pay full regard to specific local conditions.
78. In addition to the GEATM guidance, DMRB LA 112 provides guidance to both the direct effects of a new scheme, and to effects caused by increases in traffic levels on existing roads. The

guidance provides example definitions of where severance could be experienced and notes that for pedestrians crossing at-grade (i.e. on the same level), AADT flows of 4,000 or less, 4,000 to 8,000, 8,000 to 16,000 and 16,000 plus the relative sensitivity would be low, medium, high and very high respectively.

27.6.1.3 Vulnerable Road Users and Road Safety

79. GEART states the following in terms of the assessment of road safety:

“Where a development is expected to produce a change in the character of traffic (e.g. HGV movements on rural roads), then data on existing accidents levels may not be sufficient. Professional judgement will be needed to assess the implications of local circumstances, or factors which may elevate or lessen the risk of accidents, e.g. junction conflicts.”

80. In this context, an examination of the existing PIAs occurring within the onshore highway study area has been undertaken to identify any areas of the highway with concentrations of PIAs, or roads with PIA rates that are higher than the 2022 national average PIA rate. These locations 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 Project.

81. Whilst some additional methodology for the review of road safety is set out in GEATM, it states:

“The calculation of collision rates is still considered a relevant approach to scale a road safety assessment.”

82. This chapter also takes account of the following, as set out in the revised guidance in GEATM.

“Assess the effects of additional development traffic for all users (including vulnerable groups) across the whole width of the highway corridor. This model should also assess the effect of any changes to the baseline road network, such as the provision of access junctions.”

27.6.1.4 Pedestrian Amenity

83. GEATM broadly defines pedestrian amenity as the “relative pleasantness of a journey”. It is affected by traffic flow, traffic composition, footway width and separation from traffic. GEATM suggests that a tentative threshold for judging the significance of changes in pedestrian amenity is where the traffic flow (or its lorry component) is halved or doubled. It is therefore considered that a change in the traffic flow of - 50 % or +100 % would produce a ‘major’ change in pedestrian amenity. However, it also suggests:

“Thresholds are expressed as a starting point for any assessment and typically have been derived from studies of major changes in traffic flow and therefore should be used cautiously in any assessment. The assessment of amenity should pay full regard to specific local conditions.”

27.6.1.5 Dust and Dirt

84. Certain types of development, particularly construction sites, can give rise to deposition of dust and dirt on surrounding roads. The overall impact of this phenomenon normally depends to a large extent on the management practices adopted at the site in question, such as vehicle sheeting and wheel washing.

85. Problems with dust and dirt are unlikely to occur at distances greater than 50m from the road (IEMA, March 1993). Where relevant, the effects relating to dust and dirt are considered within this chapter and the magnitude of impact identified using professional judgement and the advice provided in the above guidance document.
86. The impact of dust associated with the construction of the Project on air quality is provided in Volume 1, Chapter 19: Onshore Air Quality.

27.6.1.6 Abnormal Indivisible Loads (ALLs)

87. ALLs are oversized vehicles and load with the following criteria:

- A weight of more than 44,000kg;
- An axle load of more than 10,000kg for a single non-driving axle and 11,500kg for a single driving axle;
- A width of more than 2.9m; or
- A rigid length of more than 18.65m.

ALLs requiring a Special Order are vehicles and load with:

- 150,000 kgs or 16,500 kgs in weight per axle;
- 6.1 metres wide; or
- 30 metres long in rigid length when loaded.

88. The transportation of large ALLs may lead to delays on the highway network. Non-Special Order ALLs would be required for the installation of the export cable (the cable drums) and special order ALLs would be required for the construction of the OnSS.

27.6.1.7 Users of Public Rights of Way (PRoW)

89. The criteria in DMRB LA 112 Population and Human Health and GEATM have been adopted to assess the impact of the construction works associated with the Project on these users.
90. Where a PRoW intersects with highway links whilst DMRB LA 112 sets out the sensitivity in terms of the number of vehicles intersecting a PRoW (or other WCH route), it does not provide definitions for the magnitude of impact. Therefore, this has been defined from guidance in GEATM for pedestrian severance.
91. GEATM indicates that DfT has historically set out that traffic flows would have to increase by more than 30% in order for a 'slight' change in severance to occur, 60% for a 'moderate' change to occur and 90% for a 'substantial' change to occur.
92. Paragraph 3.1.6 of GEATM states:

“Whilst these thresholds no longer appear in DfT guidance, they have not been superseded by subsequent changes to guidance and are established through planning case law. Special caution needs to be observed when baseline flows are very low, as high percentage changes are not likely to cause severance impacts.”

93. Therefore, the significance of effect will be determined based on the magnitude of impact, receptor sensitivity and professional judgement.
94. DMRB LA 112 considers where PRow are proposed to be temporarily closed and diverted in terms the disruption incurred to the existing route, with diversions of less than 50m, 51m to 250m, 250m to 500m and greater than 500m resulting in negligible, minor, moderate and major magnitude of impact.
95. The significance of effect will be determined based on the magnitude of impact, receptor sensitivity and professional judgement.
96. DMRB LA 112 also states:
- “The study area shall be based on the construction footprint/project boundary (including compounds and temporary land take) plus a 500m area surrounding the project boundary.”*
97. However, it goes on to say:
- “Where effects are unlikely to occur within the 500m area surrounding the project boundary, the study area should be reduced accordingly.”*
98. The scope of assessment has been defined as all PRow within the Order Limits that might be directly impacted by the construction works.

27.6.1.8 Other Impacts

99. Traffic-borne noise and vibration effects and air quality effects informed by the traffic data outlined in this chapter are assessed in Volume 1, Chapter 19 (document reference 6.1.19 and Volume 1, Chapter 26 (document reference 6.1.26), respectively.
100. The traffic data provided to inform Volume 1, Chapter 19 (document reference 6.1.19 and Volume 1, Chapter 26 (document reference 6.1.26) are not reported in this chapter as the data requirements for the assessments undertaken in those chapters differ from the traffic and transport assessment; however, both the noise and air quality assessments are derived from the same dataset of forecast construction traffic for the Project.

27.6.1.9 Operational and Maintenance Activities

101. Following the Planning Inspectorate comments contained within the Scoping Opinion (The Planning Inspectorate, 2022), as summarised in Table 27.2, it was agreed that effects associated with operational and maintenance activities could be scoped out, given that expected number of vehicle movements would be negligible.
102. It is anticipated that at a maximum, there would be approximately four to eight traffic movements per day; however, limited to a two-week period for annual testing. Outside of this period, there are likely to be approximately four to eight traffic movements per week. In addition, there is expected to be one visit to each Transition Joint Bay (TJB) per year. This magnitude of vehicle movements would be well below the Rule 1 or Rule 2 threshold for assessment as described in Paragraph 152.

27.6.1.10 Decommissioning Activities

103. Decommissioning activities are not anticipated to exceed the construction phase worst case criteria assessed. In addition, it is also recognised that policy, legislation, and local sensitivities constantly evolve, which will limit the relevance of undertaking an assessment at this stage.
104. Furthermore, the decommissioning methodology would be finalised nearer to the end of the lifetime of the Project, to be in line with current guidance, policy and legislation. As such, any methodology would be agreed with the relevant authorities and statutory consultees at the appropriate time.
105. As such, in recognition of the above, a qualitative assessment of likely decommissioning activities has been undertaken, given the uncertainty of potential works.

27.6.2 Design Guidance

106. The design guidance documents identified in Table 27.14 have been used for the design of the construction accesses, haul road crossings, widening, and passing bay schemes, as presented in Section 3.0, Section 7.0 and Annexes F, H and N of Volume 3, Appendix 27.1 (document reference 6.3.27.1). The same guidance would be used to design any other road widening schemes that have not yet been defined. The highway mitigation proposals would be secured through a Memorandum of Understanding (MoU) with LCC as the local highway authority.

Table 27.14 Transport Design Guidance

Document	Application
DMRB CD 123 – Geometric design of at-grade priority and signal-controlled junctions (National Highways, November 2021)	Adopted as best practice within this assessment for the design of all accesses.
DMRB CD 109 – Highway link design (National Highways, March 2020)	
Manual for Streets (Chartered Institute of Highways and Transportation, 2007)	Guidance to inform the visibility requirements for of junctions where measured speeds are below 37mph.
Manual for Streets 2 (Chartered Institute of Highways and Transportation, 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 lane or road closures

27.6.3 Realistic Worst-Case Scenario

27.6.3.1 Key Parameters for Assessment

Trip Generation Parameters

107. The key trip generation parameters are:

- Core working hours – 07:00 to 19:00 (Monday to Saturday), which doesn't take into account some 24-hour working that may be required for trenchless crossing works;
- The construction workforce would arrive and depart in cars and LGVs;
- The construction workforce arrival and departures:
 - 80% arriving before 07:00 and leaving after 18:00 (April to October), or before 16:00 (November to March), based on approximate daylight hours; and
 - 20% arriving between 07:00 and 09:00 and leaving between 16:00 and 18:00 (the peak hour periods identified on the highway network) at any time of the year;
- Core HGV deliveries - 07:00 to 19:00 (Monday to Saturday);
- The two-way HGV movements assumes a vehicle arriving at a construction access or TCC, uploading and departing at the same access;
- Car occupancy – two people per car, which is considered a conservative estimate, given core working hours will be the same for the majority of workers, who may frequent the same local accommodation and wish to share travel costs; and
- The two-way employee movements assumes a vehicle arriving at a construction access or TCC in the morning and leaving in the evening, as per the assumptions above.

Trip Distribution Parameters - HGVs

108. In terms of the traffic distribution parameters, all HGV traffic associated with the construction phase of the Project is assumed to use the routes identified in Volume 3, Appendix 27.1 (document reference 6.3.27.1) and in Table 27.4. This is with the exception of Special Order AILs which would follow the route(s) confirmed with the AIL route assessment (see Annex A in Volume 3, Appendix 27.1 (document reference 6.3.27.1))

Trip Distribution Parameters – Construction Workforce

109. A simple population divided by distance (squared) gravity model has been prepared based on settlements within an approximate one-hour journey time from the centre of the study area to distribute the likely vehicle movements from the construction workforce, noting that this will be highly dependent on the availability of accommodation at the time of the construction period.

110. For the purposes of the assessment HGVs and construction workforce vehicles will use the same routes to ensure a robust assessment along these highway links and junctions. However, in reality, depending on the proportion of local employees and the availability of local accommodation for workers who do not live in the local area, the distribution of construction worker vehicles is likely to be spread across the wider network, reducing the level of likely

impact across the LRN.

111. The construction workforce distribution is summarised in Table 27.15.

Table 27.15 Construction Workforce Trip Distribution

Location	Population	Distance (km)	Weighted (Population/distance)	Distribution (%)
Boston	58,124	14	297	33.0
Grantham	44,000	44	23	2.5
Grimsby	88,243	42	50	5.6
Horncastle	6,651	22	14	1.5
Kings Lynn	42,800	47	19	2.2
Lincoln	130,200	40	81	9.1
Louth	16,419	27	23	2.5
Mablethorpe	12,531	22	26	2.9
Newark	37,084	50	15	1.7
Peterborough	186,400	48	81	9.0
Skegness	24,876	12	173	19.2
Sleaford	17,359	32	17	1.9
Spalding	28,722	27	39	4.4
Spilsby	3,440	12	24	2.7
Wisbech	31,573	42	18	2.0

Assessment Scenarios

Two assessment scenarios have been considered to take account of the maximum likely impact on all highway links in the study area, as described in Volume 3, Appendix 27.1 (document reference 6.3.27.1) including the routing assumptions.

112. The assessment scenarios are:

- Scenario 1: Maximum impact in Skegness; and
- Scenario 2: Use of a haul road and Low Road between the A158 and the A52 for HGV through movements to avoid Skegness.

113. The maximum forecast daily traffic flows (total and HGVs) across the study area of Scenarios 1 or 2 for the Onshore ECC is shown in Figure 27.6.10, Figure 27.06.11 and Figure 27.6.12 of Volume 2, Chapter 27 (document references 6.2.27.10, 6.2.27.11 and 6.2.27.12 (total vehicles, HGVs and workforce vehicles)

114. Whilst the overall assessment of traffic and transport is based on the maximum daily traffic flows for the Project during the construction phase, as these traffic movements are anticipated to be during two months of the core 42 month construction programme only, the average daily construction traffic flows associated with the Project over the total 51 month construction programme have also been identified, as set out in Section 4.0 of Volume 3, Appendix 27.1 (document reference 6.3.27.1) are also referred to in the analysis in Section 27.8 of this chapter.

Maximum Design Scenario

115. Table 27.16 sets out the Maximum Design Scenario in environmental terms, defined by the

project design envelope.

Table 27.16 Maximum Design Scenario for Traffic and Transport for the Project Alone

Potential effect	Maximum adverse scenario assessed	Justification
Construction		
Driver severance and delay	<p>The maximum number of total vehicles/HGVs expected at each construction access location, as set out in Annex J of Volume 3, Appendix 27.1 (document reference 6.3.27.1)</p> <p>Where open trenching technology is an option for the export cable to be installed under a road, it is assumed that there would be a temporary lane or road closure (the worst case for each).</p>	<p>The maximum forecast vehicle movements at each construction access will not necessarily occur simultaneously. However, a reduction factor has been applied to the resulting trip generation on the core construction vehicle access routes as this would be a significant over estimation.</p> <p>The assessment does not consider 24-hour working that may be required for trenchless crossings activities in exceptional circumstance, which would spread employee vehicle movements over a wider time period and lessen the hourly impact, although this would only involve construction worker movements associated with different shift times, not HGV movements.</p>
Community severance; Vulnerable road users and road safety; Pedestrian Amenity; and Dust and dirt	<p>The maximum number of construction vehicles expected on each highway link, as set out in Table 27.27 Maximum Daily Trip Generation Percentage Impacts occurring at the same time.</p>	<p>The assessment uses a conservative estimate of car sharing as a result of the implementation of measures within the Outline TP (document reference 8.16).</p> <p>The assessment includes a sensitivity test of a proportion of employee vehicle movements (20%) in the morning and evening highway peak hours.</p>
Decommissioning		
All effects considered	<p>The vehicle movements associated with the decommissioning phase are expected to be no worse than the construction phase. This is because it is anticipated that similar types and number of vehicles are anticipated to be required for decommissioning as would be used for construction.</p>	

27.6.4 Embedded Mitigation

116. Mitigation measures that were identified and adopted as part of the evolution of the Project design (embedded into the Project design) and that are relevant to traffic and transport are listed in Table 27.17. The mitigation includes embedded measures such as design changes, and applied mitigation, which is subject to further study or approval of details; these include avoidance measures that will be informed by pre-construction surveys, and necessary additional consents where relevant. The composite of embedded and applied mitigation measures apply to all parts of the Project development works, including pre-construction, construction, operation and maintenance and decommissioning.

Table 27.17 Mitigation Relating to Traffic and Transport

Project phase	Mitigation measures embedded into the project design
Construction	
Outline CTMP	An Outline CTMP (document reference 8.15), has been prepared alongside the ES which sets out the key principles and types of measures to be implemented during construction of the Project.
Outline TP	An Outline TP (document reference 8.16) is provided alongside the ES and includes a range of demand management measures including a target car share ratio. The Outline TP also provides details of how compliance with targets will be measured, monitored, and reported upon. A conservative estimate of the implementation of the TP has been considered.
Outline PAMP	An Outline PAMP (document reference 8.17) has been prepared alongside the ES, which sets out the anticipated mechanisms for managing the use of PRow.
Strategy for access	<p>The strategy for access has selected routes that where possible, seek to reduce the impact of traffic upon local communities.</p> <p>Trenchless techniques will be used underneath the railway and key roads (this will be assessed based on the importance of the road and the impacts on driver delay and the feasibility of using open trenching with single lane closures).</p>
Only roads where the width of the carriageway is unlikely to permit one lane to be kept open will be temporarily closed to install the cable.	<p>A trenchless crossing technique will be utilised for the installation of the export cable under a number of roads, including the main 'A' roads and other key roads in the study area.</p> <p>Where feasible, for the roads where the open trenching method is to be adopted to remain open at all times and to minimise disruption, it is proposed that:</p> <ul style="list-style-type: none"> ■ The road crossings would be completed in two stages maintaining one traffic lane in each direction; ■ Traffic would be controlled through temporary traffic signals;

Project phase	Mitigation measures embedded into the project design
	<ul style="list-style-type: none"> ▪ A safe route would be maintained for pedestrians through the works areas; ▪ Advanced signing would be implemented to assist drivers in finding alternative routes; and ▪ The works would be staggered so that multiple roads would not be closed at the same time, minimising the potential impact to users of the highway network.
Use of temporary haul roads.	<p>The Project have committed to the construction of a temporary haul road along each open trenched section of the onshore ECC, with distinct access points to reduce construction traffic on local roads.</p> <p>Prioritise the use of haul roads where practicable, to minimise construction vehicles on the highway network. In particular, using the haul road to form a by-pass so that HGVs can avoid Skegness.</p>
Decommissioning	
Best practice construction measures	Decommissioning works would be undertaken in accordance with best practice measures at the relevant time.

27.7 Assessment Criteria and Assignment of Significance

117. The magnitude of traffic impacts is a function of the existing volumes of traffic, the percentage increase and, changes in the type of traffic and the temporal distribution of traffic due to a development. The determination of magnitude has been undertaken by considering the parameters of the Project, establishing the scope of the receptors that may be affected and quantifying these effects utilising GEATM, DMRB LA 112 and professional judgement.
118. Consideration is given to the composition of the traffic on the road network under both existing and proposed conditions. For example, LGVs have less impact on traffic and the road system than HGVs. Similarly, HGVs can have less impact than AIL vehicles, depending on the frequency of the AILs.
119. The magnitude of the impact is defined in Table 27.18.

Table 27.18 Impact magnitude definitions

Magnitude of impact	Driver severance and delay	Community severance/Dust and dirt	Vulnerable road users and road safety	Pedestrian amenity	Users of PRow
High	<p>Quantitative assessment of road capacity based on existing traffic flows and predicted future traffic levels.</p> <p>Qualitative assessment of inconvenience associated with a temporary lane or road closure.</p>	>60% increase in traffic.	Qualitative assessment of existing accident records and predicted increases in traffic	Greater than 100% increase in traffic (or HGV component) and a review based upon the quantum of vehicles, vehicle speed and pedestrian footfall.	<p>Increase in total traffic flows of 90% and above on a link intersecting a PRow.</p> <p>OR</p> <p>>500m increase (adverse) /decrease (beneficial) in WCH journey length.</p>
Medium	<p>Quantitative assessment of road capacity based on existing traffic flows and predicted future traffic levels.</p> <p>Qualitative assessment of inconvenience associated with a temporary lane or road closure.</p>	31% to 60% increase in traffic.	Qualitative assessment of existing accident records and predicted increases in traffic.	Greater than 100% increase in traffic (or HGV component) and a review based upon the quantum of vehicles, vehicle speed and pedestrian footfall.	<p>Increase in total traffic flows of 60 to 89% on a link intersecting a PRow.</p> <p>OR</p> <p>>250m – 500m increase (adverse) or decrease (beneficial) in WCH journey length.</p>

Magnitude of impact	Driver severance and delay	Community severance/Dust and dirt	Vulnerable road users and road safety	Pedestrian amenity	Users of PRow
Low	Quantitative assessment of road capacity based on existing traffic flows and predicted future traffic levels. Qualitative assessment of inconvenience associated with a temporary lane or road closure.	11 to 30% increase in traffic.	Qualitative assessment of existing accident records and predicted increases in traffic.	Greater than 100% increase in traffic (or HGV component) and a review based upon the quantum of vehicles, vehicle speed and pedestrian footfall.	Increase in total traffic flows of 30 to 59% on a link intersecting a PRow. OR 50m to 250m increase (adverse) or decrease (beneficial) in WCH journey length.
Negligible	<30 two-way vehicle movements at a junction approach. No temporary lane or road closure.	<10% increase in traffic.	<10% increase in traffic.	Change in traffic flows (or HGV component) less than 100%.	Increase in total traffic flows of less than 29% on a link intersecting a PRow. OR <50m increase (adverse) or decrease (beneficial) in WCH journey length. (or no diversion)

120. The potential sensitivity of receptors to changes in traffic levels has been determined by considering the study area and the presence of receptors in relation to each potential impact.
121. For impacts associated with the increase in vehicle movements on the highway network, GEATM provide two thresholds, whereby a full assessment of the impact is required:
- Rule 1 – Include highway links where total traffic flows are predicted to increase by more than 30% or where the number of HGVs is predicted to increase by more than 30%; and
 - Rule 2 - Include any other specifically sensitive areas where total traffic flows are predicted to increase by 10% or more.
122. Rules 1 and 2 are used as a screening tool to determine whether or not a full assessment of effects on routes within the study area is required as a result of intensification of road traffic. Where anticipated construction traffic volumes are not greater than 30% (or 10% at sensitive locations), a detailed assessment of effects is not necessary.
123. Paragraph 2.18 of GEATM state:
- “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”.*
124. In this context, GEATM does not define a sensitive area and, therefore, the assessor makes a professional judgement based on experience and the nature of the study area. Each receptor has been assessed individually to determine its sensitivity, between negligible and high, and the assessment criteria chosen are shown in Table 27.19.
125. For the impacts associated with WCH on PRoW, Table 3.11 of DMRB LA 112 sets out the sensitivities, between negligible and very high, based on the hierarchy of the route, the type of use and potential for alternatives.
126. For the assessment of potential driver severance and delay associated with the use of open trenching technology, the sensitivity of each link has been based on professional judgement and identified based on the following:
- The strategic importance of the road/highway hierarchy;
 - The existing types of users of the road; and
 - Availability of suitable alternative routes.

Table 27.19 Sensitivity/Importance of the Environment

Sensitivity	Impact	Description/reason
High	Increase in traffic	Receptors of greatest sensitivity to traffic flows: schools, colleges, playgrounds, accident black spots (with reference to accident data), retirement homes, urban/residential roads without footways that are used by pedestrians.

Sensitivity	Impact	Description/reason
	WCH users of PRow	Regional trails and routes (e.g. promoted circular walks) likely to be used for recreation and to a lesser extent commuting, that record frequent (daily) use. Limited potential for substitution. PRow for WCH crossing roads with >8,000 to 16,000 vehicles per day.
	Use of open trenching	'A' Roads or any roads with no alternative route available, that serve residential properties or farms.
Medium	Increase in traffic	Traffic flow sensitive receptors: congested junctions, doctors' surgeries, hospitals, shopping areas with roadside frontage, roads with narrow footways, unsegregated cycleways, community centres, parks, recreation facilities.
	WCH users of PRow	PRow and other routes close to communities which are used for recreational purposes (e.g. dog walking), but for which alternative routes can be taken. These routes are likely to link to a wider network of routes to provide options for longer, recreational journeys. PRow for WCH crossing roads with >4,000 to 8,000 vehicles per day.
	Use of open trenching	Roads that are regularly used, with alternative routes available
Low	Increase in traffic	Receptors with some sensitivity to traffic flow: places of worship, public open space, nature conservation areas, listed buildings, tourist attractions, residential areas with adequate footways.
	WCH users of PRow	WCH routes which have fallen into disuse through past severance, or which are scarcely used because they do not currently offer a meaningful route for utility/recreational use. PRow for WCH crossing roads with <4,000 vehicles per day.
	Use of open trenching	Roads that are unlikely to be regularly used, with alternative routes available.
Negligible	Increase in traffic	Receptors with low sensitivity to traffic flows and those sufficiently distant from affected roads/junctions
	WCH users of PRow	n/a
	Use of open trenching	n/a

27.7.1 Baseline Sensitivity

27.7.1.1 Highway Links (Increase in Traffic)

127. Using the review of the construction vehicle access routes and a summary of road safety (see Section 3.0 of Volume 3, Appendix 27.1 (document reference 6.3.27.1) and in Section 27.5.3 of this chapter), Table 27.20 Link Based Sensitive Receptors (Core and Local Construction Vehicle Access Routes) Table 27.20 identifies the sensitivity of each highway link to changes in the volume of traffic, based on the criteria in Table 27.19 and professional judgement.

Table 27.20 Link Based Sensitive Receptors (Core and Local Construction Vehicle Access Routes)

Location Reference	Highway Link(s)	Sensitivity Level	Rationale for Receptor Sensitivity
1 and 2	B1449; between A1111 and A52	Medium	This is a main (B) road but has pockets of residential properties adjacent to the road through Bilsby which would be susceptible to increases in traffic flow.
3	A1104; east of A1028 towards Alford	High	A main (A) road, but with residential properties, shops and a school close to the road in Alford that would be susceptible to increases in traffic flows.
4	A52; Marsh Lane to the west of Mumby	Medium	A main (A) road designed to carry high quantities of traffic, but with pockets of residential developments, including Hogsthorpe and Mumby and would be utilised to access a number of large caravan sites.
5	A52; between Marsh Lane and A158	High	A main (A) road designed to carry high quantities of traffic, but has residential properties, caravan parks and shops close to the road which would be susceptible to increases in traffic flow.
6 to 8	South Ings Lane; between Marsh Lane, Sloothby High Lane and Listoft Lane	Low	Rural unclassified roads with limited receptors.
9	Marsh Lane (east of AC-10/AC-11)	Low	A rural unclassified road with limited receptors.
10	Marsh Lane (west of AC10/AC-11)	Medium	A rural unclassified road which runs through the village of Orby, where there are residential development on both sides and a footway provided, though limited facilities, which would be susceptible to increases in traffic flow.
11	A158; between Lincoln Road and A52	High	A main (A) road designed to carry high quantities of traffic, but with residential development to both sides, a caravan park, a college, and some shops which could be susceptible to increases in traffic flow.
12	A158; between A1028 and Lincoln Road	Low	A main (A) road designed to carry high quantities of traffic. In recent years the route has been realigned to avoid Burgh le Marsh.
13 and 14	A52; between A158 and B1195	High	A main (A) road designed to carry high quantities of traffic, but has residential properties and shops on both sides, and provides access to the train station.

Location Reference	Highway Link(s)	Sensitivity Level	Rationale for Receptor Sensitivity
15 to 19	A52; between B1195 and A16	Low	A main (A) road designed to carry high quantities of traffic.
20	Church Lane (Croft)	Low	Rural unclassified road, two residential properties, caravan storage facility.
21	Mill Lane and Gunby Lane	Low	Rural unclassified roads with a small number of residential properties mainly set back from the carriageway.
22 and 23	B1195	Low	A principal (B) road.
24	Boston Road between the A52 and Mill Lane	Low	A principal (B) road with no sensitive receptors.
25 and 26	Collision Gate, Crow's Lane and Brewster Lane	Low	Rural unclassified roads with no sensitive receptors.
28	Horbling Lane/Midville Road/Fodderdyke Road/Station Road	Low to High	Rural unclassified roads ranging between no and some residential properties or sensitive receptors. Primary school at Midville Road.
29	Fen Bank	Low	Rural unclassified roads with no sensitive receptors.
30	Mill Lane	High	Narrow section at the brewery, with no footways and restricted visibility, allotments and potential for moderate pedestrian activity.
31 and 32	Low Road, Yawing Gate Road and Howgarth Lane	Low	Rural unclassified roads with limited residential frontage or activity.
33 and 34	Common Road	Low	A rural unclassified road with only a small number of residential frontages.
35 and 36	West End Lane/Lowfields Road/Ings Road	Low	A rural unclassified road already used by HGVs due to it having an existing commercial presence.
37 and 38	Cut End Road and Pinfold Lane	Medium	Minor rural roads providing access to a small number of properties and businesses.
39	Millfield Lane East, Low Road, Streetway and Streetway/Wyberton Roads	Low	Rural road with several properties set back from the road.

Location Reference	Highway Link(s)	Sensitivity Level	Rationale for Receptor Sensitivity
40	Station Road, Skeldyke Road, Nidd's Lane and Marsh Road	High	Residential properties with access to local facilities on Station Road, playground. Residential properties close to the carriageway on Nidd's Lane, unlikely to be many pedestrian movements.
41	Wash Road and Craven's Lane	Medium	Residential properties on Wash Road with no footway but unlikely to be many pedestrian movements.
42 and 43	A16; between Shirbeck Quarter and A17	Low	A main (A) road designed to carry high quantities of traffic.
44 and 45	A17; between A16 and Red Cow Drove	Low	A main (A) road designed to carry high quantities of traffic.
46	A17; between A1121 and A16	Low	A main (A) road designed to carry high quantities of traffic.
47	A17; west of A1121 towards Heckington	Low	A main (A) road designed to carry high quantities of traffic.
48	A16: south of the A17	Low	A main (A) road designed to carry high quantities of traffic.
49	A1121; between A17/A52	Low	A main (A) road designed to carry high quantities of traffic.
50	A16; between A155 and A52	Medium	A main (A) road designed to carry high quantities of traffic, but has residential properties close to the road as it passes through Spilsby, and Pilgrim hospital is located along the link which would be susceptible to increases in traffic flow.
51	A16; between A155 and A1028	Medium	A main (A) road designed to carry high quantities of traffic, but with residential developments on one side and access to a school as it passes through Spilsby.
52	A16; between A1028 and A158	Low	A main (A) road designed to carry high quantities of traffic.
53	A16; north of A1028 towards Burwell	Low	A main (A) road designed to carry high quantities of traffic.
54	A1028; between A1104 and A158	Low	A main (A) road designed to carry high quantities of traffic.
55	A158; between A16 and A1028	Low	A main (A) road designed to carry high quantities of traffic.

Location Reference	Highway Link(s)	Sensitivity Level	Rationale for Receptor Sensitivity
56	A158 between A16 and Horncastle	Low to Medium	A main (A) road designed to carry high quantities of traffic, but has residential properties close to the road as it passes through Horncastle
57	A1104 north of B1449	Low	Rural road with several properties set back from the road.
58	A16; between A52 and Shirbeck Quarter	High	A main (A) road designed to carry high quantities of traffic, but with residential properties, a school, and shops close to the road that would be susceptible to increases in traffic.
59	A52; between A1121 and A16	Medium	A main (A) road designed to carry high quantities of traffic, but with residential developments close to the road that would be susceptible to increases in traffic flows.
60	Lincoln Road (Skegness)	High	Residential properties, shops and school, Skegness Hospital and other local facilities.
61	Low Road (east of Croft)	Medium	Residential properties, caravan park
62	Marsh Road, Surfleet Bank	Low	Minor rural road, serving agricultural uses
n/a	Surfleet Bank (A17)	High	Residential properties close to the carriageway and tight bend, shared route with the Macmillan Way.
n/a	Surfleet Bank (A16)	Low	Rural unclassified road with no sensitive receptors.

27.7.1.2 Highway Links (Temporary Lane Closure)

128. Using the review of the highway network within the study area, the sensitivity of each highway link to a temporary lane closure (the worst case scenario for these links, given the width of the road would permit one lane to be temporarily closed) based on the criteria in Table 27.19 and professional judgement is summarised in Table 27.21.

Table 27.21 Highway Link Sensitivity for a Temporary Lane Closure

Highway link	Review of link sensitivity	Sensitivity
Marsh Lane	Key route serving Orby and between the A158 and Ingoldmells, would be a short delay.	Medium
Ingoldmells Road	Relatively low traffic flows, not likely to be a main route for emergency services, would be a short delay.	Low
Church End Road	Very low traffic flows, access to North Sea Camp Open Prison, would be a short delay.	Medium

27.7.1.3 Highway Links (Temporary Road Closure)

129. Using the review of the highway network in the study area, the sensitivity of each highway link to a temporary road closure (the worst-case scenario for these links) based on the criteria in Table 27.19 and professional judgement is summarised in Table 27.22.

Table 27.22 Highway Link Sensitivity for a Temporary Road Closure

Highway link	Review of link sensitivity	Sensitivity
Langham Road	Very low traffic flows, relatively convenient alternative route available.	Low
Lowgate Road		
Listoft Lane		
South Ings Lane		
Sloothby High Lane		
Bracken Lane		
Billgate Lane		
Middlemarsh Road	Very low traffic flows, re-routing could involve a journey via Skegness.	Medium
Church Lane	Low traffic flows, relatively convenient alternative route choice.	Low
Brewster Lane	Very low traffic flows, convenient alternative route choice.	Low
Collision Gate		
Church Lane		
Hall Gate	Field track, could be used by one property, alternative and likely main route available	Low
Scald Gate	Very low traffic flows, convenient alternative route choice.	Low
Burgh Road	Route between Friskney and Burgh-Le-Marsh, low traffic flows, alternative route available, but using	Medium

Highway link	Review of link sensitivity	Sensitivity
	single track roads or a longer route via higher category roads.	
Cranberry Lane	Very low traffic flows, convenient alternative route choice.	Low
Mill Hill		
Small End Road		
Skirmore Road	Very low traffic flows, relatively convenient alternative route choice.	Low
Patman's Lane		
Ivery Lane		
Broadgate		
Cragmire Lane		
Common Road		
Manor Lane		
Seadyke Lane	Very low traffic flows, convenient alternative route choice.	Low
Faunt Bridge		
Pode Lane		
Skipmarsh Lane		
Southfields		
Ings Drove	Very low traffic flows, relatively convenient alternative route choice.	Low
Ings Road		
Double Bank	Very low traffic flows, relatively convenient alternative route choice.	Low
Lowfields Lane		
Foxhole Lane	Likely to be very low traffic flows, convenient alternative route choice.	Low
Butterwick Road	Very low traffic flows, convenient alternative route choice.	Low
Shore Road		
Clampgate Road		
Grovefield Lane		
Lane off Grovefield Lane	Likely to be very low traffic flows, convenient alternative route choice.	Low
Cut End Road	Very low traffic flows, relatively convenient alternative route choice.	Low
Woad Lane	Very low traffic flows, no alternative routes	High
Frampton Roads	Would restrict vehicular access to RSPB Frampton Marsh but alternative access.	Low
Marsh Road	Would restrict vehicular access to Fosdyke Wash, no alternative access. More sensitive in the summer months due to tourism.	Low to high
Sandholme Lane	Serves a farm/business/property, alternative route available	Low
Marsh Lane Track	Field track and PRoW, any vehicles would be limited to the fields it connects to	Low

Highway link	Review of link sensitivity	Sensitivity
Wash Road	Very low traffic flows, convenient alternative route choice.	Low
Pullover Lane	Very low traffic flows, no alternative routes	High
Marsh Drove	Very low traffic flows, wouldn't lock access for two properties in the vicinity	Low
Marsh Road, Surfleet Bank	Very low traffic flows, no alternative routes	High

27.7.1.4 Public Rights of Way (PRoW)

130. Using the review of the PRoW in the Transport Assessment (see Volume 3, Appendix 27.1 (document reference 6.3.27.1) and in Section 27.4.7 of this chapter, the sensitivity of each PRoW, based on the criteria in Table 27.19 and professional judgement, has been identified. Given the tourism in the study area, for the purposes of the assessment and taking into account the large network of PRoW and alternatives for recreation purposes such as dog walking, all routes have been assigned a medium sensitivity, rising to high sensitivity for the summer months when these routes would have a much more frequent use. Given there may be some routes that are infrequently used, in the absence of user data, this is considered to be a robust assessment.
131. Sensitivity and magnitude of impact as set out within the detailed criteria have then been considered collectively to determine the potential effect and its significance. The collective assessment represents a 'considered assessment' by the assessor, based on the likely sensitivity of the receptor to the change (e.g. is a receptor present which would be affected by the change), and then the magnitude of that change. Table 27.23 is used as a guide to determine the level of effect. 'Major' and 'moderate' effects are considered to be 'significant' in terms of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017.

Table 27.23 Matrix to Determine Effect Significance

		Magnitude of impact			
		<i>Negligible</i>	<i>Low</i>	<i>Medium</i>	<i>High</i>
Sensitivity of receptor	<i>Negligible</i>	Negligible (Not significant)	Negligible (Not significant)	Minor (Not significant)	Minor (Not significant)
	<i>Low</i>	Negligible (Not significant)	Minor (Not significant)	Minor (Not significant)	Moderate (Significant)
	<i>Medium</i>	Minor (Not significant)	Minor (Not significant)	Moderate (Significant)	Major (Significant)
	<i>High</i>	Minor (Not significant)	Moderate (Significant)	Major (Significant)	Major (Significant)

27.7.2 Assumptions and Limitations

27.7.2.1 Covid-19 and the Impact on Personal Injury Accident Data Collection

132. The Covid-19 pandemic, and the associated periods of lockdown and travel restrictions, reduced the number of vehicles on the highway network during 2020 and 2021. Therefore, the period of Personal Injury Accident (PIA) data collection has been extended to 2015 and the most recent data available⁸ (which is September 2022), for a robust assessment.

27.8 Impact Assessment

27.8.1 Construction

133. This section presents the assessment of impacts arising from the construction phase of the Project.

27.8.1.1 Driver Severance and Delay

Peak Hour Traffic Impact

134. A screening process has been undertaken for each construction vehicle route highway link to identify routes that are likely to have sufficient changes in traffic flows in the peak hours on the highway network (which fall between 07:00 to 09:00 and 16:00 to 18:00 at different locations on the highway network) and therefore require further impact assessment for driver

⁸ At the time of the request for data

severance and delay.

135. The consideration of potential driver severance and delay has been assessed across the highway network in the study area based on the forecast peak hour trip generation of the Project during the construction phase, using the worst-case assumptions set out in the MDS.

136. Volume 3, Appendix 27.1 (document reference 6.3.27.1) sets out the maximum forecast vehicle movements (HGV and LGV) for the construction of the Project during the peak hours on the highway network for the assessment scenarios as described in paragraph 112 and the two-way peak hour vehicle movements is shown in Table 27.24 (Scenario 1 as the worst case).

Table 27.24 Peak Hour Vehicle Movements – Onshore ECC and 400kV Cable Corridor

Location Reference	Highway Link	Maximum Two-Way		
		LGV	HGV	Total
1	B1449 Thurlby Road	2	14	16
2	B1449 Long Lane	2	14	16
3	A1104	2	14	16
4	A52 (west of Hogsthorpe)	2	14	16
5	A52 between Marsh Lane and Skegness	1	0	1
6	Listoft Lane	1	2	3
7	Sloothby High Lane	1	4	5
8	South Ings Lane	1	6	7
10	Marsh Lane (west of AC-10/AC-11)	2	12	14
11	A158 Skegness Road (east of AC-12/AC-13)	0	12	12
12	A158 Skegness Road (west of AC-12/AC-13)	6	47	53
13	A52 (north of Low Road)	7	12	19
14	A52 (south of Low Road)	10	12	22
15	A52 (Holland Lane)	11	7	18
16	A52 (Wrangle)	16	7	23
17	A52 (Butterwick)	16	7	23
18	A52 Wainfleet Road (west of AC-34/AC-35)	14	36	50
19	A52 Wainfleet Road (east of AC-34/AC-35)	14	36	50
20	Church Lane	0	3	3
21	Gunby Lane	2	14	16
22	B1195 (Irby in the Marsh)	2	14	16
23	B1195 (Thorpe St. Peter)	6	14	20
24	Boston Road (Wainfleet)	5	0	5
25	Brewster Lane	1	5	6
26	Collision Gate	0	2	2
27	Scald Gate	1	0	1
28	Horbling Lane	1	17	18
29	Fen Bank	1	17	18
30	Mill Lane	1	0	1

Location Reference	Highway Link	Maximum Two-Way		
		LGV	HGV	Total
31	Howgarth Lane	1	4	5
32	Low Road	1	4	5
33	Common Road	3	14	17
34	Common Road (near A52)	3	14	17
35	Ings Road	3	13	16
36	West End Road	3	13	16
37	Cut End Road	1	3	4
38	Pinfold Lane	1	3	4
39	Millfield Lane East to Wyberton Roads	1	6	7
40	Station Road to Marsh Road	2	13	15
41	Wash Road/Craven's Lane	1	6	7
42	A16 (north of AC-39)	12	5	17
43	A16 (south of AC-39)	11	25	36
44	A17 (south of River Welland)	2	18	20
45	A17 (north of River Welland)	5	15	20
46	A17 (between A16 and A1121)	2	25	26
47	A17 (west of A1221)	3	29	32
48	A16 (south of A17)	14	29	43
49	A1121 between Boston and A17	1	10	11
50	A16 between A52 (Boston) and A155	8	37	45
51	A16 between A155 and A158	7	37	44
52	A16 between A158 and A1028	3	54	57
53	A16 north of A1028/A1104	3	54	57
54	A1028 between A158 and A16	0	38	38
55	A158 between A1028 and A16	4	38	42
56	A158 west of A16	3	54	57
58	A16 Boston	27	20	47
59	A52 Boston	9	10	19
60	Lincoln Road Skegness	1	15	16
61	Low Road (east of Croft)	10	12	22
62	Marsh Road (Surfleet Bank)	1	4	5

137. Table 27.24 shows that the locations forecast to have greater than 30 two-way vehicle movements on the LRN are shown in

Table 27.25 Highway Links with Over 30 Two-Way Project Peak Hour Vehicle Movements

Location Reference	Highway Link	Maximum Two-Way		
		Total	HGV	Car/LGV
12	A158 Skegness Road (west of AC-12/AC-13)	53	47	6

Location Reference	Highway Link	Maximum Two-Way		
		Total	HGV	Car/LGV
18	A52 Wainfleet Road (west of AC-32/AC-33)	50	36	14
19	A52 Wainfleet Road (east of AC-32/AC-33)	50	36	14
43	A16 (south of AC-39)	37	25	11
47	A17 (west of A1221)	32	29	3
48	A16 (south of A17)	43	29	14
50	A16 between A52 (Boston) and A155	45	37	8
51	A16 between A155 and A158	44	37	7
52	A16 between A158 and A1028	57	54	3
53	A16 north of A1028/A1104	57	54	3
54	A1028 between A158 and A16	38	38	0
55	A158 between A1028 and A16	42	38	4
56	A158 west of A16	57	54	3
58	A16 Boston	47	20	27

138. A16 (An analysis of the forecast maximum two-way vehicle movements associated with the construction of the Project over 30 is provided in Volume 3, Appendix 27.1 (document reference 3.6.27.1). This sets out that for the A16, the A52 Wainfleet Road, the A1028 between the A158 and the A16, and the A17, the percentage increase of vehicle movements in the peak hour would be less than 10% and therefore, given increases of less than 10% are not expected to rise to any discernible environmental impact, as set out in Paragraph 123, no further assessment of driver severance and delay on these highway links in the peak hour is undertaken in this chapter.
139. For the A158, the percentage increase of vehicle movements in the peak hour would be marginally greater than 10% (maximum 13.4%). Given the A158 is a key route capable of carrying large volumes of traffic and not considered sensitive, this increase on vehicle movements would be well below the 30% threshold in Rule 1 of the EIA assessment guidelines for traffic and transport, as described in Paragraph 122. Therefore, no further assessment of driver severance and delay on this highway link in the peak hour is undertaken in this chapter.
140. Further review of the peak hour vehicle movements associated with the construction of the Project forecast to route via Boston is provided in Paragraphs 157 to 159 of Volume 3, Appendix 27.1 (document reference 3.6.27.1).

Impact of Open Trenching on Highway Links

141. The other aspect of driver severance and delay would be as a result of the installation of the export cable across roads using open trenching technology, as set out in Section 27.4.6.

142. Where possible, the affected roads would be kept open with traffic management measures in place to ensure minimal disruption to existing vehicles on the highway network. In this scenario (known as shuttle working) there would be a slight delay as a result of temporary traffic lights or manually operated 'STOP/GO' boards to keep one lane open; however, the works for crossing these roads will be for a short period, no longer than seven days. For some of the roads where the width of the carriageway is unlikely to permit one lane to be kept open (as set out in Table 27.22 Highway Link Sensitivity for a Temporary Road Closure), an assessment has been undertaken on the assumption that a temporary road closure would be required.
143. It is assumed that any temporary road closure would be for a maximum of seven days and should more than one temporary road closure be required during the construction of the Project these would not be simultaneous unless agreed with LCC in advance or via approval of the final CTMP.
144. Table 27.26 provides the assessment of driver severance and delay on the highway links as a result of a temporary road or lane closure (the worst-case scenario forecast for each link).
145. For the identified magnitude of impact for each link, the use of traffic management measures in the Outline CTMP (document reference 8.15) such as suitable signage warning users of the temporary road closures and diversions available, have been considered and will be developed as part of the final CTMP, which would need to be approved by LCC. Where direct access would be affected by a temporary road closure, the Applicant would liaise with those users directly to ensure disruption is as minimal as possible whilst an access is temporarily closed, which could include 24-hour working and/or providing an alternative crossing, where appropriate. This would include liaising with the emergency services, to ensure access could be maintained during the closure.

Table 27.26 Assessment of Severance and Delay on the Highway Links as a Result of a Temporary Lane or Road Closure

Highway link	Impact (worst case)	Sensitivity	Magnitude of impact	Level of effect
Marsh Lane	Temporary lane closure	Medium	Low - Short duration of temporary closure	Minor adverse (not significant)
Ingoldmells Road				
Church Road				
Church End Road	Temporary lane closure	Medium		
Langham Road	Temporary road closure	Low	Low - Short duration of temporary closure	Minor adverse (not significant)
Lowgate Road				
Listoft Lane				
South Ings Lane				
Sloothby High Lane				
Bracken Lane				
Billgate Lane				
Church Lane				
Brewster Lane				
Collision Gate				
Church Lane				
Scald Gate				
Burgh Road				
Cranberry Lane				
Mill Hill				
Skirmore Road				
Patman's Lane				
Ivery Lane				
Broadgate				
Cragmire Lane				
Common Road				

Highway link	Impact (worst case)	Sensitivity	Magnitude of impact	Level of effect
Manor Lane				
Seadyke Lane				
Faunt Bridge				
Pode Lane				
Skipmarsh Lane				
Southfields				
Ings Drove				
Ings Road				
Double Bank				
Lowfields Lane				
Foxhole Lane				
Butterwick Road				
Shore Road				
Clampgate Road				
Grovefield Lane				
Cut End Road				
Frampton Roads				
Marsh Lane Track				
Wash Road				
Middlemarsh Road	Temporary road closure	Medium	Low - Short duration of temporary closure	Minor adverse (not significant)
Marsh Road	Temporary road closure	Low to high	Low - Short duration of temporary closure	Minor adverse (not significant) to Moderate (significant)
Woad Lane	Temporary road closure	High	Low - Short duration of temporary closure	Moderate adverse (not significant)
Pullover Lane				
Marsh Road, Surfleet Bank				

Highway link	Impact (worst case)	Sensitivity	Magnitude of impact	Level of effect
Marsh Drove		Low	Low - Short duration of temporary closure	Minor adverse (not significant)

146. Based on the analysis in Table 27.26, for the majority of the highway links, the temporary adverse effects on driver severance and delay would be minor in significance, which is not significant in terms of the EIA Regulations.
147. For Marsh Road, if the cable crossing works were undertaken during the summer when tourism is at its' peak, the sensitivity is considered to be high and therefore the level of effect would be moderate adverse, which is significant in terms of the EIA Regulations. However, the Applicant will endeavour to programme these works to be outside of the summer months when there would much fewer traffic movements on these links and with early communication to the public of the planned temporary closure.
148. For Woad Lane, Pullover Lane and Marsh Road (Surfleet Bank), a small number of users are likely to be affected by any temporary road closure; however, as there are no alternative routes, a moderate effect has been identified.
149. Given the above, whilst it is the Applicant's intention to use a trenchless technique to install the cable under Marsh Road, Woad Lane, Pullover Lane and Marsh Road (Surfleet Bank), should any planned road closure be required, the Applicant would ensure steel plates are installed around the open trench to allow vehicle movements during the temporary road closure.
150. Given the temporary road closures would be for a very short duration and the proposed mitigation options set out above, the effect would reduce to minor adverse, which is not significant in terms of the EIA Regulations.

27.8.1.2 The AADT/ADT Percentage Impact Assessment Screening

151. A screening process has been undertaken for each link to identify routes that are likely to have sufficient changes in daily traffic flows and therefore require further impact assessment for:
- Community severance;
 - Vulnerable road users and highway safety;
 - Pedestrian amenity; and
 - Dust and dirt.
152. The screening process has been undertaken in accordance with GEART (Rule 1/Rule 2):
- Rule 1 - Include highway links where total traffic flows are predicted to increase by more than 30% or where the number of HGVs is predicted to increase by more than 30%; and
 - Rule 2 - Include any other specifically sensitive areas where total traffic flows are predicted to increase by 10% or more.
153. Percentage impact calculations against a future baseline of 2027, have been undertaken for the worst case of the trip generation assessment scenarios (Scenario 1), as set out in paragraph 112.
154. The maximum two-way daily trip generation and percentage impact against the 2027 future baseline traffic flows on each highway link are shown in Table 27.27.

155. The maximum two-way daily trip generation is also shown in Figure 27.6.10, Figure 27.6.11 and Figure 27.6.12 of Volume 2, Chapter 27 (document references 6.2.27.10, 6.2.27.11 and 6.2.7.12).

Table 27.27 Maximum Daily Trip Generation Percentage Impacts

Location Reference	Highway Link	2027		Peak Project Trip Generation		2027 with Peak ODOV		Percentage Impact (%)	
		Total	HGV	Total	HGV	Total	HGV	Total	HGV
1	B1449 Thurlby Road	3,529	120	195	174	21	3,724	5.5	144.4
2	B1449 Long Lane	2,635	91	195	174	21	2,830	7.4	190.8
3	A1104	7,464	246	195	174	21	7,659	2.6	70.8
4	A52 (south of Hogsthorpe)	4,151	90	195	174	21	4,347	4.7	193.9
5	A52 between Marsh Lane and Skegness	3,983	117	10	0	10	3,993	0.3	0.0
6	Listoft Lane	80	7	31	23	8	111	38.9	316.2
7	Sloothby High Lane	1,556	36	56	46	10	1,612	3.6	127.0
8	S Ings Lane	1,105	21	81	69	12	1,186	7.3	327.3
9	Marsh Lane (between ECC and A52)	5,094	110	3	0	3	5,096	0.1	0.0
10	Marsh Lane (west of AC-10/AC-11)	5,094	110	163	145	18	5,257	3.2	132.6
11	A158 Skegness Road (east of AC-12/AC-13)	13,542	313	147	147	0	13,689	1.1	47.0
12	A158 Skegness Road (west of AC-12/AC-13)	13,542	313	623	565	58	14,166	4.6	180.8
13	A52 (north of Low Road)	8,359	177	219	147	72	8,577	2.6	83.2
14	A52 (south of Low Road)	8,359	177	244	147	97	8,602	2.9	83.2
15	A52 (Holland Lane)	5,035	199	198	87	111	5,232	3.9	43.7
16	A52 (Wrangle)	6,618	290	243	87	156	6,861	3.7	30.0
17	A52 (Butterwick)	9,051	537	243	87	156	9,294	2.7	16.2
18	A52 Wainfleet Road (west of AC-34/AC-35)	12,096	440	574	434	140	12,669	4.7	98.5
19	A52 Wainfleet Road (east of AC-34/AC-35)	12,096	440	575	434	141	12,670	4.8	98.5
20	Church Lane	1,038	27	40	36	4	1,078	3.8	131.5
21	Gunby Lane	1,082	49	184	163	21	1,266	17.0	334.8
22	B1195 (Irby in the Marsh)	1,140	33	184	163	21	1,323	16.1	488.8
23	B1195 (Thorpe St. Peter)	859	21	218	163	55	1,076	25.4	782.1

Location Reference	Highway Link	2027		Peak Project Trip Generation		2027 with Peak ODOV		Percentage Impact ()	
		Total	HGV	Total	HGV	Total	HGV	Total	HGV
24	Boston Road (Wainfleet)	1,328	43	47	0	47	1,375	3.6	0.0
25	Brewster Lane	35	1	69	54	14	103	197.6	6083.0
26	Collision Gate	9	0	30	27	3	39	353.6	n/a
27	Scald Gate	26	1	10	0	10	36	37.4	0.0
28	Horbling Lane	1,417	184	210	200	10	1,627	14.8	109.0
29	Fen Bank	673	23	210	200	10	884	31.2	881.7
30	Mill Lane	507	12	10	0	10	517	2.0	0.0
31	Howgarth Lane	127	2	54	45	9	181	42.5	2,743.8
32	Low Road	807	33	54	45	9	861	6.7	137.2
33	Common Road	232	7	192	164	28	424	82.9	2,255.6
34	Common Road (near A52)	243	5	192	164	28	435	79.2	3,157.8
35	Ings Road	289	11	187	157	30	476	64.7	1,386.9
36	West End Road	579	60	187	157	30	766	32.3	261.5
37	Cut End Road	221	10	38	33	5	259	17.1	339.0
38	Pinfold Lane	8	0	38	33	5	46	455.0	n/a
39	Millfield Lane East to Wyberton Roads	222	8	89	77	12	311	40.0	956.5
40	Station Road to Marsh Road	334	10	177	153	24	511	53.2	1,519.1
41	Wash Road/Craven's Lane	222	5	89	77	12	310	40.1	1,519.1
42	A16 (north of AC-39)	23,012	904	183	64	120	23,196	0.8	7.1
43	A16 (south of AC-39)	23,012	904	420	305	115	23,432	1.8	33.7
44	A17 (south of River Welland)	19,638	1,799	238	220	18	19,876	1.2	12.2
45	A17 (north of River Welland)	19,638	1,799	227	175	51	19,865	1.2	9.8
46	A17 (between A16 and A1121)	18,229	1,926	314	294	20	18,543	1.7	15.3
47	A17 (west of A1221)	25,097	3,224	381	353	28	25,478	1.5	10.9
48	A16 (south of A17)	16,942	1,711	489	350	139	17,431	2.9	20.5

Location Reference	Highway Link	2027		Peak Project Trip Generation		2027 with Peak ODOW		Percentage Impact ()	
		Total	HGV	Total	HGV	Total	HGV	Total	HGV
49	A1121 between Boston and A17	9,125	639	124	116	9	9,249	1.4	18.1
50	A16 between A52 (Boston) and A155	7,042	314	531	447	84	7,573	7.5	142.4
51	A16 between A155 and A158	9,980	778	521	447	74	10,501	5.2	57.5
52	A16 between A158 and A1028	5,878	518	687	653	35	6,565	11.7	126.0
53	A16 north of A1028/A1104	9,515	651	684	653	32	10,200	7.2	100.2
54	A1028 between A158 and A16	6,415	281	462	462	0	6,877	7.2	164.2
55	A158 between A1028 and A16	12,367	395	499	462	37	12,866	4.0	116.8
56	A158 west of A16	8,033	303	680	653	28	8,713	8.5	215.2
57	A1104 north of B1149	4,615	192	0	0	0	4,615	0.0	0.0
58	A16 Boston	39,495	2,211	508	241	267	40,003	1.3	10.9
59	A52 Boston	19,337	696	210	121	89	19,547	1.1	17.3
60	Lincoln Road Skegness	10,052	138	182	177	5	10,234	1.8	127.7
61	Low Road (east of Croft)	622	8	244	147	97	865	39.2	1,764.6
62	Marsh Road (Surfleet Bank)	58	2	56	51	5	115	96.5	2,456.6

156. Using Table 27.27, which shows the maximum predicted daily total and HGV traffic increases on each highway link and in accordance with GEATM, Rule 1 and Rule 2, a screening process has been undertaken for each link to identify routes that are likely to have sufficient changes in traffic flows and therefore require further impact assessment.
157. The screening assessment, which identifies the sensitivity of each link to changes in traffic is shown in Table 27.28.

Table 27.28 EIA Screening

Location Reference	Highway Link	Percentage Impact		Sensitivity	Threshold (%)		Assessment under EIA Regulations?
		Total	HGV		Total	HGV	
1	B1449 Thurlby Road	5.5	144.4	Medium	10	30	Yes
2	B1449 Long Lane	7.4	190.8	Medium	10	30	Yes
3	A1104	2.6	70.8	High	10	30	Yes
4	A52 (south of Hogsthorpe)	4.7	193.9	Medium	10	30	Yes
5	A52 between Marsh Lane and Skegness	0.3	0.0	High	10	30	No
6	Listoft Lane	38.9	316.2	Low	30	30	Yes
7	Sloothby High Lane	3.6	127.0	Low	30	30	Yes
8	S Ings Lane	7.3	327.3	Low	30	30	Yes
9	Marsh Lane (between ECC and A52)	0.1	0.0	Low	30	30	No
10	Marsh Lane (west of AC-10/AC-11)	3.2	132.6	Medium	10	30	Yes
11	A158 Skegness Road (east of AC-12/AC-13)	1.1	47.0	High	10	30	Yes
12	A158 Skegness Road (west of AC-12/AC-13)	4.6	180.8	Low	30	30	Yes
13	A52 (north of Low Road)	2.6	83.2	High	10	30	Yes
14	A52 (south of Low Road)	2.9	83.2	Low	30	30	Yes
15	A52 (Holland Lane)	3.9	43.7	Low	30	30	Yes
16	A52 (Wrangle)	3.7	30.0	Low	30	30	No
17	A52 (Butterwick)	2.7	16.2	Low	30	30	No
18	A52 Wainfleet Road (west of AC-34/AC-35)	4.7	98.5	Low	30	30	Yes
19	A52 Wainfleet Road (east of AC-34/AC-35)	4.8	98.5	Low	30	30	Yes
20	Church Lane	3.8	131.5	Low	30	30	Yes
21	Gunby Lane	17.0	334.8	Low	30	30	Yes
22	B1195 (Irby in the Marsh)	16.1	488.8	Low	30	30	Yes
23	B1195 (Thorpe St. Peter)	25.4	782.1	Low	30	30	Yes
24	Boston Road (Wainfleet)	3.6	0.0	Low	30	30	No

Location Reference	Highway Link	Percentage Impact		Sensitivity	Threshold (%)		Assessment under EIA Regulations?
		Total	HGV		Total	HGV	
25	Brewster Lane	197.6	6083.0	Low	30	30	Yes
26	Collision Gate	353.6	n/a	Low	30	30	Yes
27	Scald Gate	37.4	0.0	Low	30	30	Yes
28	Horbling Lane	14.8	109.0	Medium	10	30	Yes
29	Fen Bank	31.2	881.7	Low	30	30	Yes
30	Mill Lane	2.0	0.0	High	30	30	No
31	Howgarth Lane	42.5	2,743.8	Low	30	30	Yes
32	Low Road	6.7	137.2	Low	30	30	Yes
33	Common Road	82.9	2,255.6	Low	30	30	Yes
34	Common Road (near A52)	79.2	3,157.8	Low	30	30	Yes
35	Ings Road	64.7	1,386.9	Low	30	30	Yes
36	West End Road	32.3	261.5	Low	30	30	Yes
37	Cut End Road	17.1	339.0	Medium	10	30	Yes
38	Pinfold Lane	455.0	n/a	Medium	10	30	Yes
39	Millfield Lane East to Wyberton Roads	40.0	956.5	Low	30	30	Yes
40	Station Road to Marsh Road	53.2	1,519.1	High	10	30	Yes
41	Wash Road/Craven's Lane	40.1	1,519.1	High	10	30	Yes
42	A16 (north of AC-39)	0.8	7.1	Low	30	30	No
43	A16 (south of AC-39)	1.8	33.7	Low	30	30	Yes
44	A17 (south of River Welland)	1.2	12.2	Low	30	30	No
45	A17 (north of River Welland)	1.2	9.8	Low	30	30	No
46	A17 (between A16 and A1121)	1.7	15.3	Low	30	30	No
47	A17 (west of A1221)	1.5	10.9	Low	30	30	No
48	A16 (south of A17)	2.9	20.5	Low	30	30	No
49	A1121 between Boston and A17	1.4	18.1	Low	30	30	Yes
50	A16 between A52 (Boston) and A155	7.5	142.4	Medium	10	30	Yes

Location Reference	Highway Link	Percentage Impact		Sensitivity	Threshold (%)		Assessment under EIA Regulations?
		Total	HGV		Total	HGV	
51	A16 between A155 and A158	5.2	57.5	Medium	10	30	Yes
52	A16 between A158 and A1028	11.7	126.0	Low	30	30	Yes
53	A16 north of A1028/A1104	7.2	100.2	Low	30	30	Yes
54	A1028 between A158 and A16	7.2	164.2	Low	30	30	Yes
55	A158 between A1028 and A16	4.0	116.8	Low	30	30	Yes
56	A158 west of A16	8.5	215.2	Medium	10	30	Yes
57	A1104 north of B1149	0.0	0.0	Low	30	30	No
58	A16 Boston	1.3	10.9	Medium - High	10 or 30	30	No
59	A52 Boston	1.1	17.3	High	10	30	No
60	Lincoln Road Skegness	1.8	127.7	High	10	30	Yes
61	Low Road (east of Croft)	39.2	1,764.6	Medium	10	30	Yes
62	Marsh Road (Surfleet Bank)	96.5	2,456.6	Low	30	30	Yes

158. The highway links that are identified for further assessment in terms of the impact of a change in traffic volume are summarised in Table 27.29.

Table 27.29 Highway Links Taken Forward for Assessment

Location Reference	Highway Link	Percentage Impact (%)	
		Total	HGV
1	B1449 Thurlby Road	5.5	144.4
2	B1449 Long Lane	7.4	190.8
3	A1104	2.6	70.8
4	A52 (south of Hogsthorpe)	4.7	193.9
6	Listoft Lane	38.9	316.2
7	Sloothby High Lane	3.6	127.0
8	S Ings Lane	7.3	327.3
10	Marsh Lane (west of AC-10/AC-11)	3.2	132.6
11	A158 Skegness Road (east of AC-12/AC-13)	1.1	47.0
12	A158 Skegness Road (west of AC-12/AC-13)	4.6	180.8
13	A52 (north of Low Road)	2.6	83.2
14	A52 (south of Low Road)	2.9	83.2
15	A52 (Holland Lane)	3.9	43.7
18	A52 Wainfleet Road (west of AC-34/AC-35)	4.7	98.5
19	A52 Wainfleet Road (east of AC-34/AC-35)	4.8	98.5
20	Church Lane	3.8	131.5
21	Gunby Lane	17.0	334.8
22	B1195 (Irby in the Marsh)	16.1	488.8
23	B1195 (Thorpe St. Peter)	25.4	782.1
25	Brewster Lane	197.6	6083.0
26	Collision Gate	353.6	n/a
27	Scald Gate	37.4	0.0
28	Horbling Lane	14.8	109.0
29	Fen Bank	31.2	881.7
31	Howgarth Lane	42.5	917.0
32	Low Road	6.7	2,853.8
33	Common Road	82.9	142.7
34	Common Road (near A52)	79.2	2,346.0
35	Ings Road	64.7	3,284.5
36	West End Road	32.3	1,442.5
37	Cut End Road	17.1	272.0
38	Pinfold Lane	455.0	352.6
39	Millfield Lane East to Wyberton Roads	40.0	409.3
40	Station Road to Marsh Road	53.2	994.8
41	Wash Road/Craven's Lane	40.1	1,580.0
43	A16 (south of AC-39)	1.8	33.7
49	A1121 between Boston and A17	1.4	18.1

Location Reference	Highway Link	Percentage Impact (%)	
		Total	HGV
50	A16 between A52 (Boston) and A155	7.5	142.4
51	A16 between A155 and A158	5.2	57.5
52	A16 between A158 and A1028	11.7	126.0
53	A16 north of A1028/A1104	7.2	100.2
54	A1028 between A158 and A16	7.2	164.2
55	A158 between A1028 and A16	4.0	116.8
56	A158 west of A16	8.5	215.2
60	Lincoln Road Skegness	1.8	127.7
61	Low Road (east of Croft)	39.2	1,764.6
62	Marsh Road (Surfleet Bank)	96.5	2,456.6

27.8.1.3 Community Severance

159. In Table 27.18, less than a 10% increase in total traffic is considered a negligible magnitude of impact of the potential effects of community severance. Table 27.30 summarises the level of effects on the highway links with a negligible magnitude of impact (less than 10% increase in total traffic).

Table 27.30 Negligible Magnitude of Impact (Community Severance) – Summary of Effects

Location Reference	Highway Link	Sensitivity	Level of Effect
1	B1449 Thurlby Road	Medium	Minor
2	B1449 Long Lane	Medium	Minor
3	A1104	High	Minor
4	A52 (south of Hogsthorpe)	Medium	Minor
7	Sloothby High Lane	Low	Negligible
8	S Ings Lane	Low	Negligible
10	Marsh Lane (west of AC-10/AC-11)	Medium	Minor
11	A158 Skegness Road (east of AC-12/AC-13)	High	Minor
12	A158 Skegness Road (west of AC-12/AC-13)	Low	Negligible
13	A52 (north of Low Road)	High	Minor
14	A52 (south of Low Road)	Low	Negligible
15	A52 (Holland Lane)	Low	Negligible
18	A52 Wainfleet Road (west of AC-34/AC-35)	Low	Negligible
19	A52 Wainfleet Road (east of AC-34/AC-35)	Low	Negligible
20	Church Lane	Low	Negligible
32	Low Road	Low	Negligible
43	A16 (south of AC-39)	Low	Negligible
49	A1121 between Boston and A17	Low	Negligible
50	A16 between A52 (Boston) and A155	Medium	Minor
51	A16 between A155 and A158	Medium	Minor
53	A16 north of A1028/A1104	Low	Negligible

Location Reference	Highway Link	Sensitivity	Level of Effect
54	A1028 between A158 and A16	Low	Negligible
55	A158 between A1028 and A16	Low	Negligible
56	A158 west of A16	Medium	Minor
60	Lincoln Road Skegness	High	Minor

160. In summary, there would be a **negligible** or **minor adverse** effect of community severance on all the highway links in Table 27.30, which is **not significant** in terms of the EIA Regulations.

161. Table 27.31 summarises the level of effects on the highway links with a low magnitude of impact (11% to 30% increase in total traffic).

Table 27.31 Low Magnitude of Impact (Community Severance) – Summary of Effects

Location Reference	Highway Link	Sensitivity	Level of Effect
21	Gunby Lane	Low	Minor
22	B1195 (Irby in the Marsh)	Low	Minor
23	B1195 (Thorpe St. Peter)	Low	Minor
25	Brewster Lane	Low	Minor
26	Collision Gate	Medium	Minor
27	Scald Gate	Low	Minor
28	Horbling Lane	Medium	Minor
37	Cut End Road	Medium	Minor
52	A16 between A158 and A1028	Low	Minor

162. In summary, there would be a **minor adverse** effect of community severance on all the highway links in Table 27.31, which is **not significant** in terms of the EIA Regulations.

163. Table 27.32 summarises the level of effects on the highway links with a medium magnitude of impact (31% to 60% increase in total traffic).

Table 27.32 Medium Magnitude of Impact (Community Severance) – Summary of Effects

Location Reference	Highway Link	Sensitivity	Level of Effect
6	Listoft Lane	Low	Minor
27	Scald Gate	Low	Minor
29	Fen Bank	Low	Minor
31	Howgarth Lane	Low	Minor
36	West End Road	Low	Minor
39	Millfield Lane East to Wyberton Roads	Low	Minor
40	Station Road to Marsh Road	High	Major
41	Wash Road/Craven's Lane	High	Major

Location Reference	Highway Link	Sensitivity	Level of Effect
61	Low Road (east of Croft)	Medium	Moderate

164. As Table 27.32 shows, for Listoft Lane, Scald Gate, Fen Bank, Howgarth Lane, West End Road and Millfield Lane East to Wyberton Roads, the level of effect in terms of community severance would be **minor adverse** and therefore **not significant** in terms of EIA regulations.
165. The level of effect in terms of community severance on Low Road (east of Croft) would be **moderate adverse** and therefore **significant** in terms of EIA regulations.
166. The level of effect in terms of community severance on Station Road to Marsh Road and Wash Road/Craven's Lane would be **major adverse** and therefore **significant** in terms of EIA regulations.
167. Paragraph 3.16 of GEATM states that caution needs to be observed when applying the thresholds for the increase in traffic, as very low baseline flows are unlikely to experience severance impacts even with high percentage changes in traffic, with regard to local conditions.
168. For Low Road (east of Croft), there are some residential properties and a caravan park at the eastern end and a local shop at the petrol filling station at the junction with the A52. Whilst the former verge on the northern side of the carriageway adjacent to the residential properties close to the junction with the A52 has recently been replaced by a footway, improving safety for pedestrians (including an informal crossing with dropped kerb and tactile paving to a footway on the southern side of the carriageway, towards the caravan park); the width of Low Road at the approach to the A52 increases to around 20m at the give-way line and with the increase in vehicle movements associated with the construction of the Project, the ability for pedestrians to cross Low Road safely could be compromised, particularly for anyone slow moving or with impaired mobility.
169. In terms of the magnitude of impact, using the average traffic flows during the first 42-months of the 51-month construction programme (for the cable duct and export cable installation works) forecast to use this construction vehicle access route (33, as set out in Volume 3, Appendix 27.1 (document reference 3.6.27.1)), it would be low and therefore a minor level of effect.
170. Taking the above into consideration and with the implementation of safety measures in the final CTMP and the implementation of the final Travel Plan to minimise the number of construction workforce vehicle movements, the magnitude of impact is considered to be low adverse overall and with medium sensitivity, results in a **minor adverse** level of effect on community severance, which is **not significant** in terms of the EIA Regulations.
171. Notwithstanding the above, the Applicant is committed to investigating options for safety improvements for pedestrians to cross Low Road, such as a central refuge and would be discussed with LCC prior to the commencement of construction of the Project, should the DCO be approved.

172. For the Station Road to Marsh Road local construction vehicle access route, the following can be taken into consideration:
- On Station Road and the start of Skeldyke Road, there are footways for pedestrians to access the playground and a controlled pedestrian crossing on the A16 to access the local facilities in Kirton.
 - On Skeldyke Road, where the ATC was located, the baseline vehicle movement are low (334 two-way over 24-hours) and there are no local facilities requiring pedestrians to cross the road; and
 - On Nidd's Lane and Marsh Road, baseline traffic flows are likely to be lower than the baseline traffic flows on Skeldyke Lane and there are no local facilities requiring pedestrians to cross the road.
173. Based on the above, the sensitivity to community severance on this local construction vehicle access route can be reduced to medium.
174. In terms of the magnitude of impact, using the average traffic flows during the first 42-months of the 51-month construction programme (for the cable duct and export cable installation works) forecast to use this local construction vehicle access route (36, as set out in Volume 3, Appendix 27.1 (document reference 3.6.27.1)), it would be low and therefore a minor level of effect.
175. Taking the above into consideration and with the implementation of measures in the final CTMP and the implementation of the final Travel Plan to minimise the number of construction workforce vehicle movements, the magnitude of impact is considered to be low adverse overall and with medium sensitivity, results in a **minor adverse** level of effect on community severance, which is **not significant** in terms of the EIA Regulations.
176. For the Wash Road/Craven's Lane local construction vehicle access route, the following can be taken into consideration:
- On Wash Road, where the ATC was located, the baseline vehicle movements are low (222 two-way over 24-hours) and there are no local facilities requiring pedestrians to cross the road; and
 - On Craven's Lane, baseline traffic flows are likely to be lower than the baseline traffic flows on Wash Road and there are no local facilities requiring pedestrians to cross the road.
177. Based on the above, the sensitivity to community severance on this local construction vehicle access route can be reduced to low.
178. In terms of the magnitude of impact, using the average traffic flows during the first 42-months of the 51-month construction programme (for the cable duct and export cable installation works) forecast to use this local construction vehicle access route (18, as set out in Volume 3, Appendix 27.1 (document reference 6.3.27.1)), it would be low or negligible and therefore a minor level of effect.

179. Taking the above into consideration and with the implementation of measures in the final CTMP and the implementation of the final Travel Plan to minimise the number of construction workforce vehicle movements, the magnitude of impact is considered to be low adverse overall and with low sensitivity, results in a **minor adverse** level of effect on community severance, which is **not significant** in terms of the EIA Regulations.

180. Table 27.33 summarises the level of effects on the highway links with a high magnitude of impact (greater than 60% increase in total traffic).

Table 27.33 High Magnitude of Impact (Community Severance) – Summary of Effects

Location Reference	Highway Link	Sensitivity	Level of Effect
25	Brewster Lane	Low	Moderate
26	Collision Gate	Low	Moderate
33	Common Road	Low	Moderate
34	Common Road (near A52)	Low	Moderate
35	Ings Road	Low	Moderate
38	Pinfold Lane	Low	Moderate
62	Marsh Road (Surfleet Bank)	Low	Moderate

181. As Table 27.33 shows, the level of effect in terms of community severance on these highway links would be moderate adverse. However, given these highway links are rural, with very few residential dwellings and no local facilities, the sensitivity to the effect of community severance can be reduced to negligible resulting in a **negligible adverse** level of effect, which is **not significant** in terms of EIA Regulations. The implementation of the final CTMP would further reduce any likely effects of community severance.

182. In summary, there would be no significant effects of community severance.

27.8.1.4 Vulnerable Road Users and Road Safety

183. In Table 27.18, less than a 10% increase in total traffic is considered a negligible magnitude of impact of the potential effects on vulnerable road users and road safety. The level of effects on these highway links is the same as for community severance as set out in Table 27.30.

184. In summary, there would be a **negligible** or **minor adverse** effect on vulnerable road users and road safety on all the highway, links in Table 27.30, which is **not significant** in terms of the EIA Regulations.

185. For highway links with a greater than 10% increase in total traffic, Table 27.18, a qualitative assessment of existing accident records and predicted increases in traffic should be undertaken. The assessment for this potential effect is presented in Table 27.34.

Table 27.34 Review of Vulnerable Road Users and Road Safety – Summary of Effects

Location Reference	Highway Link	Total Traffic Percentage Impact (%)	Sensitivity	Review of Road Safety (1 January 2015 to 30 September 2022),
6	Listoft Lane	38.9	Low	<p>There have been no PIAs on the section of Listoft Lane that would be used by construction vehicles.</p> <p>Taking the existing road safety levels, low traffic baseline (77 daily vehicle movements) and the average increase in HGVs over the core 42-month period associated with the construction of the Project (8 daily movements, or fewer than one movement per hour), the magnitude of impact can be considered to be low adverse.</p> <p>Notwithstanding the above, to ensure safety is ensured on this section of the construction access route, warning signage would be installed to make all road users aware of the construction traffic associated with the Project and with other measures (such as the scheme of passing places proposed) that would be implemented as part of the final CTMP, the magnitude of impact can therefore be reduced to negligible adverse. As this highway link has low sensitivity, the resulting level of effect on vulnerable road users and road safety would be negligible adverse, which is not significant in terms of the EIA Regulations.</p>
21	Gunby Lane/Mill Lane	15.4	Low	<p>There have been seven PIAs on Gunby Lane with a cluster of three at the junction with the A158, including four additional PIAs on the A158 at or close to the junction with Gunby Lane.</p> <p>Two of the PIAs at the junction involved confusion between a vehicle wanting to turn right out of Gunby Lane and the intended manoeuvre of a vehicle approaching from the A158 east. The third PIA involved a vehicle</p>

Location Reference	Highway Link	Total Traffic Percentage Impact (%)	Sensitivity	Review of Road Safety (1 January 2015 to 30 September 2022),
				<p data-bbox="1025 347 2013 411">pulling out of Gunby Lane to the A158 east and colliding with a vehicle. These PIAs were therefore due to driver error.</p> <p data-bbox="1025 464 2013 568">The four PIAs that occurred on the A158 at or close to the junction did not involve a manoeuvre to or from Gunby Road and occurred in different locations with no common causation factor.</p> <p data-bbox="1025 620 2013 804">There were also two PIAs on Gunby Lane on the approach to the junction with the A158; one associated with the condition of the road, which has been improved since this date of the PIA. The second PIA involved a shunt when there a queue of stationary vehicles. This section of Gunby Lane is straight, with good forward visibility and therefore down to driver error.</p> <p data-bbox="1025 857 1653 880">None of the PIAs involved vulnerable road users.</p> <p data-bbox="1025 933 2013 1117">There have been three PIAs on Mill Lane. Two of the PIAs occurred at a similar location before the bend where Mill Lane connects to Gunby Lane. One of the PIAs involved a vehicle skidding on ice. The second PIA involved a car and a goods vehicle colliding due to the slight narrowing of the carriageway and driver distraction.</p> <p data-bbox="1025 1169 2013 1313">Taking the analysis of the PIAs above existing road safety levels into account (which is only marginally higher than the national average as described in paragraph 56) and the fact the route is already used by HGVs, the magnitude of impact can be considered to be medium adverse.</p>

Location Reference	Highway Link	Total Traffic Percentage Impact (%)	Sensitivity	Review of Road Safety (1 January 2015 to 30 September 2022),
				<p>To ensure safety is ensured at the section of Mill Lane as it connects with Gunby Lane, warning signage would be installed to make all road users aware of the construction traffic associated with the Project and with other measures implemented as part of the final CTMP, the magnitude of impact can therefore be reduced to low adverse.</p> <p>As Gunby Lane has low sensitivity, the resulting level of effect on vulnerable road users and road safety would be minor adverse, which is not significant in terms of the EIA Regulations.</p>
22	B1195 (between Mill Lane and Cork Lane)	14.6	Low	<p>There have been four PIAs on this section of the B1195, all at different locations. All PIAs involved drivers of vehicle losing control, with speed and/or weather conditions identified as contributing factors. One of the PIAs also involved a pedestrian, but at a location with no footway in a location unlikely to generate many pedestrian movements. However, this would suggest the sensitivity of this section of the B1195 can be considered to have medium sensitivity for vulnerable road users.</p> <p>Taking the analysis of the PIAs above, the existing road safety levels into account (which is only marginally higher than the national average as described in paragraph 56) the existing use by HGVs (30 daily movements) and the general width of the carriageway, the magnitude of impact can be considered to be medium adverse.</p> <p>With other measures implemented as part of the final CTMP. The magnitude of impact can be reduced to low adverse. As this highway link has medium sensitivity, the resulting level of effect on vulnerable road users and road</p>

Location Reference	Highway Link	Total Traffic Percentage Impact (%)	Sensitivity	Review of Road Safety (1 January 2015 to 30 September 2022),
				safety would be minor adverse , which is not significant in terms of the EIA Regulations.
23	B1195 (Thorpe St Peter)	23.3	Low	<p>There has been one PIA on this section of the B1195; however, there are no details available. The PIA occurred on a straight section of carriageway.</p> <p>Taking the existing road safety level, (which is only a similar level to the national average as described in paragraph 57) the existing use by HGVs (21 daily movements) and the general width of the carriageway, the magnitude of impact can be considered to be low adverse.</p> <p>With other measures implemented as part of the final CTMP. The magnitude of impact can be reduced to negligible adverse. As this highway link has low sensitivity, the resulting level of effect on vulnerable road users and road safety would be negligible adverse, which is not significant in terms of the EIA Regulations.</p>
25	Brewster Lane	197.6	Low	<p>There has been one PIA on this highway link. This involved a head-on collision at the sharp bend at the level crossing.</p> <p>Taking the existing road safety levels (significantly higher than the national average as described in paragraph 55, noting the assessment is skewed due to the very low baseline (33 daily movements)) and the average increase in HGVs over the core 42-month period associated with the construction of the Project (10 daily movements, or around one movement per hour), the magnitude of impact can be considered to be medium adverse.</p> <p>To ensure safety is ensured at the level crossing, warning signage would be installed to make all road users aware of the construction traffic associated</p>

Location Reference	Highway Link	Total Traffic Percentage Impact (%)	Sensitivity	Review of Road Safety (1 January 2015 to 30 September 2022),
				<p>with the Project. Widening of the carriageway at the bend on the approach to the level crossing would be implemented.</p> <p>Taking the above into consideration and with other measures (such as the scheme of passing places proposed) implemented as part of the final CTMP, the magnitude of impact can be reduced to low adverse. As this highway link has low sensitivity, the resulting level of effect on vulnerable road users and road safety would be minor adverse, which is not significant in terms of the EIA Regulations.</p>
26	Collision Gate	353.6	Low	<p>There have been no PIAs on Collision Gate.</p> <p>Given there have been no PIAs, the very low traffic baseline (8 daily vehicle movements) and the average increase in HGVs over the core 42-month period associated with the construction of the Project (5 daily movements, or around one movement ever two hours), the magnitude of impact can be considered to be low adverse.</p> <p>Notwithstanding the above, to ensure safety is ensured on this section of the construction access route, warning signage would be installed to make all road users aware of the construction traffic associated with the Project and with other measures (such as the scheme of passing places proposed) that would be implemented as part of the final CTMP, the magnitude of impact can therefore be reduced to negligible adverse. As this highway link has low sensitivity, the resulting level of effect on vulnerable road users and road safety would be negligible adverse, which is not significant in terms of the EIA Regulations.</p>

Location Reference	Highway Link	Total Traffic Percentage Impact (%)	Sensitivity	Review of Road Safety (1 January 2015 to 30 September 2022),
28	Horbling Lane/Midville Road/Fodderdyke Bank	14.8	Low	<p>There have been nine PIAs on these highway links, with the following six occurring at different locations and different causation factors:</p> <ul style="list-style-type: none"> ▪ Driver error and collision at the junction with the A16; ▪ Driver losing control speeding and using a mobile phone; ▪ Driver distraction and speed; ▪ Road condition – which has been improved since the PIA; ▪ Road subsiding – which has been repaired since the PIA; and ▪ Driver losing control, driving impaired by alcohol. <p>Three PIA occurred at a similar location; however, were three different causation factors:</p> <ul style="list-style-type: none"> ▪ A collision associated with a turning manoeuvre; ▪ Driver losing control due to the road condition, which has been improved since the PIA; and ▪ A wheel hitting a car that had come off a trailer. <p>None of the PIAs involved HGVs.</p> <p>Taking the analysis of PIAs set out above, the existing road safety level (which is significantly higher than the national average as described in paragraph 55), the magnitude of impact only slightly higher than the 10% threshold for formal assessment, the existing use by HGVs (184 daily movements) and the general width of the carriageway, the magnitude of impact can be considered to be low adverse.</p>

Location Reference	Highway Link	Total Traffic Percentage Impact (%)	Sensitivity	Review of Road Safety (1 January 2015 to 30 September 2022),
				<p>With other measures implemented as part of the final CTMP. The magnitude of impact can be reduced to negligible adverse. As this highway link has low sensitivity, the resulting level of effect on vulnerable road users and road safety would be negligible adverse, which is not significant in terms of the EIA Regulations.</p>
29	Fen Bank/Station Road	31.2	Low	<p>There have been seven PIAs on these highway links occurring at different locations and different causation factors:</p> <ul style="list-style-type: none"> ▪ Driver losing control due to speed, road condition (which has been improved since the PIA) and an animal in the road; ▪ Driver losing control due to excessive speed; ▪ Rider (motorcycle) due to mud on the road; ▪ Driver losing control due to illness; ▪ Driver losing control due to animal or object in the carriageway; and ▪ Driver losing control due to road condition (which has been improved since the PIA) <p>None of the PIAs involved HGVs.</p> <p>Taking the analysis of PIAs set out above, the existing road safety level (which is significantly higher than the national average as described in paragraph 55), the existing use by HGVs (35 daily movements) the magnitude of impact can be considered to be medium adverse.</p> <p>With other measures implemented as part of the final CTMP. The magnitude of impact can be reduced to low adverse. As this highway link has low</p>

Location Reference	Highway Link	Total Traffic Percentage Impact (%)	Sensitivity	Review of Road Safety (1 January 2015 to 30 September 2022),
				sensitivity, the resulting level of effect on vulnerable road users and road safety would be minor adverse , which is not significant in terms of the EIA Regulations.
31	Howgarth Lane/Yawling Gate Road/Low Road	42.5	Low	<p>There has been one PIA on these highway links (on Low Road). This was due to a fault with the vehicle and slight in severity.</p> <p>Taking the existing road safety levels (which is only marginally higher than the national average as described in paragraph 56), the average increase in HGVs over the core 42-month period associated with the construction of the Project (18 daily movements, or between one and two movements per hour), the magnitude of impact can be considered to be low adverse.</p> <p>Notwithstanding the above, to ensure safety is ensured on these construction access routes, warning signage would be installed to make all road users aware of the construction traffic associated with the Project and with other measures (such as the scheme of passing places proposed) implemented as part of the final CTMP, the magnitude of impact can be reduced to negligible adverse. As these highway links have low sensitivity, the resulting level of effect on vulnerable road users and road safety would be negligible adverse, which is not significant in terms of the EIA Regulations.</p>
33	Common Road	82.9	Low	There have been no PIAs on Common Road.

Location Reference	Highway Link	Total Traffic Percentage Impact (%)	Sensitivity	Review of Road Safety (1 January 2015 to 30 September 2022),
34	Common Road (near the A52)	79.2	Low	<p>Given there have been no PIAs, the low traffic baseline (232 and 243 daily vehicle movements) and the average increase in HGVs over the core 42-month period associated with the construction of the Project (33 daily movements or between two or three movements per hour), the magnitude of impact can be considered to be low adverse.</p> <p>Notwithstanding the above, to ensure safety on this construction access route, warning signage would be installed to make all road users aware of the construction traffic associated with the Project and with other measures (such as the scheme of passing places proposed) implemented as part of the final CTMP, the magnitude of impact can be reduced to negligible adverse. As this highway link has low sensitivity, the resulting level of effect on vulnerable road users and road safety would be negligible adverse, which is not significant in terms of the EIA Regulations.</p>
35	Ings Road	64.7	Low	<p>There have been no PIAs on Ings Road.</p> <p>Given there have been no PIAs, the low traffic baseline (289 daily vehicle movements) and the average increase in HGVs over the core 42-month period associated with the construction of the Project (34 daily movements, or around three movements per hour), the magnitude of impact can be considered to be medium adverse.</p> <p>To ensure safety is ensured on this construction access route, warning signage would be installed to make all road users aware of the construction traffic associated with the Project and with other measures (such as the scheme of passing places proposed) implemented as part of the final CTMP, the magnitude of impact can be reduced to low adverse. As this highway link</p>

Location Reference	Highway Link	Total Traffic Percentage Impact (%)	Sensitivity	Review of Road Safety (1 January 2015 to 30 September 2022),
				has low sensitivity, the resulting level of effect on vulnerable road users and road safety would be minor adverse , which is not significant in terms of the EIA Regulations.
36	West End Road/Lowfields Road	32.3	Low	<p>There have been two PIAs on West End Road/Lowfields Road. These occurred at different locations, with different causation factors (one loss of control and one collision with a parked car) and were slight in severity.</p> <p>Taking the above review of PIAs, the existing use by HGVs (60 daily movements) and large agricultural vehicles and the general width of the carriageway, the magnitude of impact can be considered to be low adverse.</p> <p>To ensure safety on this construction access route, warning signage would be installed to make all road users aware of the construction traffic associated with the Project and with other measures (such as the scheme of passing places proposes) implemented as part of the final CTMP. The magnitude of impact can be reduced to negligible adverse. As this highway link has low sensitivity, the resulting level of effect on vulnerable road users and road safety would be negligible adverse, which is not significant in terms of the EIA Regulations.</p>
37	Cut End Road	17.1	Medium	<p>There have been no PIAs on the section of Cut End Road that would be used by construction traffic.</p> <p>Given there have been no PIAs, the low traffic baseline (221 daily vehicle movements) and the average increase in HGVs over the core 42-month period associated with the construction of the Project (8 daily movements, or fewer than one movement per hour), the magnitude of impact can be considered to be low adverse.</p>

Location Reference	Highway Link	Total Traffic Percentage Impact (%)	Sensitivity	Review of Road Safety (1 January 2015 to 30 September 2022),
				<p>Notwithstanding the above, to ensure safety is ensured on this section of the construction access route, warning signage would be installed to make all road users aware of the construction traffic associated with the Project and with other measures (such as the scheme of passing places proposed) that would be implemented as part of the final CTMP, the magnitude of impact can therefore be reduced to negligible adverse. As this highway link has medium sensitivity, the resulting level of effect on vulnerable road users and road safety would be minor adverse, which is not significant in terms of the EIA Regulations.</p>
38	Pinfold Lane	404.5	Low	<p>There have been no PIAs on Pinfold Lane.</p> <p>Given there have been no PIAs, the very low traffic baseline (9 daily vehicle movements) and the average increase in HGVs associated with the construction of the Project (8 daily movements, or fewer than one movement per hour), the magnitude of impact can be considered to be low adverse.</p> <p>Notwithstanding the above, to ensure safety is ensured on this section of the construction access route, warning signage would be installed to make all road users aware of the construction traffic associated with the Project and with other measures (such as the scheme of passing places proposed) that would be implemented as part of the final CTMP, the magnitude of impact can therefore be reduced to negligible adverse. As this highway link has low sensitivity, the resulting level of effect on vulnerable road users and road safety would be negligible adverse, which is not significant in terms of the EIA Regulations</p>

Location Reference	Highway Link	Total Traffic Percentage Impact (%)	Sensitivity	Review of Road Safety (1 January 2015 to 30 September 2022),
39	Millfield Lane East to Wyberton Roads	40.0	Low	<p>Whilst there have been no PIAs on Streetway/Wyberton Roads, there have been several on the other highway links that make up the construction vehicle route from the A16:</p> <ul style="list-style-type: none"> ▪ One PIA on Streetway, which was serious in severity and involved an HGV and a cyclist, which entered the carriageway from an adjacent property in front of the HGV; ▪ One PIA at the Streetway/Low Road/Saundergate Road East junction, which was slight in severity and due to driver error; and ▪ One PIA at the Millfield East/A16 junction, which was slight in severity and due to driver error. <p>None the PIAs were due to an increase in traffic.</p> <p>Taking the above analysis of the PIAs, the low traffic baseline (213 daily vehicle movements) and the average increase in HGVs over the core 42-month period associated with the construction of the Project (16 daily movements, or around two to three movements per hour), the magnitude of impact can be considered to be low adverse.</p> <p>To ensure safety is ensured on these construction access routes, warning signage would be installed to make all road users aware of the construction traffic associated with the Project and with other measures (such as the scheme of passing places proposed) implemented as part of the final CTMP, the magnitude of impact can be reduced to negligible adverse. As these highway links have low sensitivity, the resulting level of effect on vulnerable</p>

Location Reference	Highway Link	Total Traffic Percentage Impact (%)	Sensitivity	Review of Road Safety (1 January 2015 to 30 September 2022),
				road users and road safety would be negligible adverse , which is not significant in terms of the EIA Regulations.
40	Station Road/Skelydyke Road/Nidd's Lane/Marsh Road	53.2	High	<p>There have been two PIAs on Skeldyke Road, both of which were slight in severity. The PIA at the Skeldyke Road/Station Road junction was a rear end shunt (a type of collision where the front end of a vehicle collides with the rear of another vehicle at low speed) as a result of a vehicle braking to allow an oncoming vehicle to proceed due to on-street parking. Since this PIA occurred (2015), there is now a double yellow line on all sections of the carriageway at this location, restricting on-street parking, improving road safety.</p> <p>The second PIA on Skeldyke Road was associated with a drunk driver and no other vehicle involved. There has also been one PIA on Nidd's Lane, which is part of the construction vehicle route from the A16, which was slight in severity, involving a motorcyclist sliding in the rain with no other vehicles involved.</p> <p>Taking the above analysis of the PIAs, the low traffic baseline (334 daily vehicle movements) and the average increase in HGVs over the core 42-month period associated with the construction of the Project (31 movements per day, or around two to three movements per hour), the magnitude of impact can be considered to be low adverse.</p> <p>With warning signage that would be installed to make all road users aware of the construction traffic associated with the Project, other measures (such as the scheme of passing paces proposed) implemented as part of the final CTMP, the magnitude of impact can be reduced to negligible adverse. As</p>

Location Reference	Highway Link	Total Traffic Percentage Impact (%)	Sensitivity	Review of Road Safety (1 January 2015 to 30 September 2022),
				these highway links have high sensitivity, the resulting level of effect on vulnerable road users and road safety would be minor adverse , which is not significant in terms of the EIA Regulations.
41	Wash Road	40.1	Medium	<p>There has been one PIA on Wash Road, associated with a vehicle travelling at speed entered the ditch adjacent to the carriageway during darkness.</p> <p>Taking the above analysis of the PIAs, the low traffic baseline (222 daily vehicle movements) and the average increase in HGVs over the core 42-month period associated with the construction of the Project (31 daily movements, or two to three movements per hour), the magnitude of impact can be considered to be low adverse.</p> <p>With warning signage that would be installed to make all road users aware of the construction traffic associated with the Project, other measures (such as the scheme of passing places proposed) implemented as part of the final CTMP, the magnitude of impact can be reduced to negligible adverse. As this highway link has high sensitivity, the resulting level of effect on vulnerable road users and road safety would be minor adverse, which is not significant in terms of the EIA Regulations.</p>
52	A16 between A158 and A1028	11.7	Low	<p>There have been nine PIAs on the A16 between the A158 and A1028, eight slight in severity and one serious in severity.</p> <p>All of the PIAs occurred in different locations, with a range of causation factors:</p> <ul style="list-style-type: none"> ▪ Skidding on compacted snow; ▪ Vehicle left the carriageway due to thick fog;

Location Reference	Highway Link	Total Traffic Percentage Impact (%)	Sensitivity	Review of Road Safety (1 January 2015 to 30 September 2022),
				<ul style="list-style-type: none"> ■ Animal ran into the road; ■ Car pulled out of a junction colliding with a motorcycle, a manoeuvre that wouldn't be undertaken by a construction vehicle associated with the Project; ■ Skidded in ice; ■ Three collisions due to sudden breaking; and ■ Collision due to a vehicle avoiding a parked vehicle. <p>Taking the above analysis of the PIAs, the existing road safety level (which is lower than the national average as described in paragraph 6.1.27), with none of the PIAs involving a vulnerable user, and since the percentage impact is only marginally over the threshold for assessment, the magnitude of impact can be considered to be low adverse.</p> <p>As the A16 has low sensitivity, the resulting level of effect on vulnerable road users and road safety would be minor adverse, which is not significant in terms of the EIA Regulations.</p>
61	Low Road (east of Croft)	36.8	Medium	<p>There has been one PIA on Low Road. This was due to a vehicle exiting from the karting track access and colliding with a vehicle travelling along Low Road and was slight in severity.</p> <p>During a site visit, several cyclists were observed using Low Road and given it forms part of the core construction vehicle access route network, to facilitate HGV movements between the A158 and A52 avoiding Skegness, it would be used frequently by HGV throughout the construction period.</p>

Location Reference	Highway Link	Total Traffic Percentage Impact (%)	Sensitivity	Review of Road Safety (1 January 2015 to 30 September 2022),
				<p>Whilst the existing road safety level is good, given the cyclists observed, the sensitivity for vulnerable road users has been increased to high.</p> <p>The average increase in HGVs over the core 42-month period associated with the construction of the Project is 33 per day, or around three movements per hour), the magnitude of impact can be considered to be medium adverse.</p> <p>To ensure safety is ensured on this construction access route, warning signage would be installed to make all road users aware of the construction traffic associated with the Project and with other measures (such as the scheme of passing places proposed) implemented as part of the final CTMP, the magnitude of impact can be reduced to low adverse. As this highway link has medium sensitivity, the resulting level of effect on vulnerable road users and road safety would be moderate adverse, which is significant in terms of the EIA Regulations.</p>
62	Marsh Road (Surfleet Bank)	278.5	Low	<p>There have been no PIAs on Marsh Road</p> <p>Given there have been no PIAs, the very low traffic baseline (56 daily vehicle movements) and the average increase in HGVs over the core 42-month period associated with the construction of the Project (11 daily movements, or around one movement per hour), the magnitude of impact can be considered to be low adverse.</p> <p>To ensure safety is ensured on this construction access route, warning signage would be installed to make all road users aware of the construction traffic associated with the Project and with other measures (such as the</p>

Location Reference	Highway Link	Total Traffic Percentage Impact (%)	Sensitivity	Review of Road Safety (1 January 2015 to 30 September 2022),
				scheme of passing places proposed) implemented as part of the final CTMP, the magnitude of impact can be reduced to negligible adverse. As this highway link has low sensitivity, the resulting level of effect on vulnerable road users and road safety would be negligible adverse , which is not significant in terms of the EIA Regulations.

In summary, there would be no significant effects in terms of EIA Regulations associated with vulnerable road users and road safety associated with the Onshore ECC and 400kV Connection on all highway links with the exception of Low Road (east of Croft).

27.8.1.5 Pedestrian Amenity

186. In Table 27.18, less than a 100% increase in total or HGV traffic is considered a negligible magnitude of impact on the potential effect on pedestrian amenity and for these highway links, the resulting level of effect on pedestrian amenity would be **negligible** or **minor adverse** for all categories of sensitivity, which is **not significant** in terms of the EIA Regulations, as presented in Table 27.35.

187. For highway links with a greater than 100% increase in total or HGV traffic, a review based upon the quantum of vehicles, vehicle speed and pedestrian footfall is required to identify the adverse magnitude of impact required, as set out in Table 27.36.

Table 27.35 Highway Links with Less Than 100% Increase in the Project Construction Traffic (Total Vehicles or HGVs) – Summary of Effects

Location Reference	Highway Link	Sensitivity	Level of Effect
1	B1449 Thurlby Road	Medium	Minor
2	B1449 Long Lane	Medium	Minor
4	A52 (south of Hogsthorpe)	Medium	Minor
6	Listoft Lane	Low	Negligible
7	Sloothby High Lane	Low	Negligible
8	S Ings Lane	Low	Negligible
10	Marsh Lane (west of AC-10/AC-11)	Medium	Minor
12	A158 Skegness Road (west of AC-12/AC-13)	Low	Negligible
20	Church Lane	Low	Negligible
21	Gunby Lane	Low	Negligible
22	B1195 (Irby in the Marsh)	Low	Negligible
23	B1195 (Thorpe St. Peter)	Low	Negligible
25	Brewster Lane	Low	Negligible
26	Collision Gate	Low	Negligible
28	Horbling Lane	Medium	Minor
29	Fen Bank	Low	Negligible
31	Howgarth Lane	Low	Negligible
32	Low Road	Low	Negligible
33	Common Road	Low	Negligible
34	Common Road (near A52)	Low	Negligible
35	Ings Road	Low	Negligible
36	West End Road	Low	Negligible
37	Cut End Road	Medium	Minor
38	Pinfold Lane	Medium	Minor
39	Millfield Lane East to Wyberton Roads	Low	Negligible

Location Reference	Highway Link	Sensitivity	Level of Effect
40	Station Road to Marsh Road	High	Minor
41	Wash Road/Craven's Lane	High	Minor
50	A16 between A52 (Boston) and A155	Medium	Minor
52	A16 between A158 and A1028	Low	Negligible
53	A16 north of A1028/A1104	Low	Negligible
54	A1028 between A158 and A16	Low	Negligible
55	A158 between A1028 and A16	Low	Negligible
56	A158 west of A16	Medium	Minor
62	Marsh Road (Surfleet Bank)	Low	Negligible

Table 27.36 Review of Pedestrian Amenity – Summary of Effects

Location reference	Highway link	HGV Percentage impact (%)	Sensitivity	Review of pedestrian amenity
6	Listoft Lane	316.2	Low	<p>Pedestrian footfall is likely to be very low on these highway links and whilst there are no footways and the carriageway is narrow, there are verges intermittently along these routes. The percentage impacts are very high on some links due to the very low baseline number of HGVs and should be treated with caution.</p> <p>Taking the above into account, the magnitude of impact can be considered low adverse.</p>
7	Sloothby High Lane	127.0	Low	
8	South Ings Lane	327.3	Low	
20	Church Lane	131.5	Low	
21	Gunby Lane	334.8	Low	
23	B1195 (Thorpe St. Peter)	782.1	Low	
25	Brewster Lane	6,083.0	Low	
26	Collision Gate	n/a (baseline 0)	Low	
29	Fen Bank	881.7	Low	
31	Howgarth Lane	2,743.8	Low	
32	Low Road	137.2	Low	

Location reference	Highway link	HGV Percentage impact (%)	Sensitivity	Review of pedestrian amenity
35	Ings Road	1,386.9	Low	However, with warning signage and the implementation of measures within the final CTMP, such as speed awareness i.e. drivers of all vehicles will be encouraged to drive in a safe and defensive manner at all times), the magnitude of impact can be reduced to negligible adverse overall and with low sensitivity, the resulting level of effect on pedestrian amenity would be negligible adverse , which is not significant in terms of the EIA Regulations.
38	Pinfold Lane	n/a (baseline 0)	Low	
78	Marsh Road (east of Croft)	2,456.6	Low	
1	B1449 Thurlby Road	144.4	Medium	The main pedestrian footfall will be in the village of Bilsby, where there are footways on both side of the carriageway, although these are narrow. There is also a footway connecting Bilsby to Alford along the A111. The speed limit is 30mph through the village, the carriageway is relatively wide and is already used by HGVs (116 daily movements). Taking the above into account, the magnitude of impact can be considered low adverse. However, with warning signage and the implementation of measures within the final CTMP, such as speed awareness (i.e. drivers of all vehicles will be encouraged to drive in a safe and defensive manner at all times), the magnitude of impact can be reduced to negligible adverse overall and with medium sensitivity, the resulting level of effect on

Location reference	Highway link	HGV Percentage impact (%)	Sensitivity	Review of pedestrian amenity
				pedestrian amenity would be minor adverse , which is not significant in terms of the EIA Regulations.

Location reference	Highway link	HGV Percentage impact (%)	Sensitivity	Review of pedestrian amenity
2	B1449 Long Lane	198.8	Medium	<p>The main pedestrian footfall will be in the village of Bilsby, where there are footways on both side of the carriageway, although these are narrow. There is also a footway connecting Bilsby to Alford along the A111. The speed limit is 30mph through the village, the carriageway is relatively wide and is already used by HGVs (88 daily movements). Taking the above into account, the magnitude of impact can be considered low adverse. However, with warning signage and the implementation of measures within the final CTMP, such as speed awareness (i.e. drivers of all vehicles will be encouraged to drive in a safe and defensive manner at all times), the magnitude of impact can be reduced to negligible adverse overall and with medium sensitivity, the resulting level of effect on pedestrian amenity would be minor adverse, which is not significant in terms of the EIA Regulations.</p>

Location reference	Highway link	HGV Percentage impact (%)	Sensitivity	Review of pedestrian amenity
4	A52 (west of Hogsthorpe)	193.9	Medium	<p>The main pedestrian footfall will be at Mumby, where there are residential properties and local facilities. There are footways on both sides of the carriageway for the majority of this section of the A52, however are narrow at some locations. The speed limit is 30mph through Mumby and the route is already used by HGVs.</p> <p>Taking the above into account, the magnitude of impact can be considered low adverse.</p> <p>However, with warning signage and the implementation of measures within the final CTMP, such as speed awareness (i.e. drivers of all vehicles will be encouraged to drive in a safe and defensive manner at all times), the magnitude of impact can be reduced to negligible adverse overall and with medium sensitivity, the resulting level of effect on pedestrian amenity would be minor adverse, which is not significant in terms of the EIA Regulations.</p>

Location reference	Highway link	HGV Percentage impact (%)	Sensitivity	Review of pedestrian amenity
10	Marsh Lane (west of AC-10/AC-11)	132.6	Medium	<p>The main pedestrian footfall will be at Orby, where there are residential properties and local facilities. There are footways on both sides of the road for the majority of this section of the Marsh Lane; however, are narrow at some locations. There is a sign indicating the presence of elderly pedestrians. The speed limit is 30mph through Orby and the route is used by HGVs.</p> <p>If the percentage increase in the average across the core 42-month construction programme associated with the Project (for the duct construction and cable installation works) was used for the screening for assessment, the increase is lower than 100% (33%) and would not breach the threshold for the assessment of pedestrian amenity.</p> <p>Taking the above into account, the magnitude of impact can be considered low adverse.</p> <p>However, with warning signage and the implementation of measures within the final CTMP, such as speed awareness (i.e. drivers of all vehicles will be encouraged to drive in a safe and defensive manner at all times), the magnitude of impact can be reduced to negligible adverse overall and with medium sensitivity, the resulting</p>

Location reference	Highway link	HGV Percentage impact (%)	Sensitivity	Review of pedestrian amenity
				level of effect on pedestrian amenity would be minor adverse , which is not significant in terms of the EIA Regulations.
12	A158 Skegness Road (west of AC-12/AC-13)	180.8	Low	For the majority of the length of this highway link there is unlikely to be any pedestrian footfall as there are limited uses and no footways, with the exception of the section in the vicinity of Lyndhurst Garden Centre, where there is a segregated footway on the northern side of the A158 and a controlled crossing connecting to a segregated crossing on the southern side of the A158, which connects from Burgh.

Location reference	Highway link	HGV Percentage impact (%)	Sensitivity	Review of pedestrian amenity
				<p>If the percentage increase in the average across the core 42-month construction programme associated with the Project (for the duct construction and cable installation works) was used for the screening for assessment, the increase is lower than 100% (45%) and would not breach the threshold for the assessment of pedestrian amenity.</p> <p>Taking the above into account, the magnitude of impact can be considered low adverse and with low sensitivity, would result in an effect that is negligible adverse, which is not significant in terms of the EIA Regulations.</p>
22	B1195 (Irby in the Marsh)	488.8	Low	<p>Pedestrian footfall is likely to be low and where there may be some movements, there are sections of footway available.</p> <p>Taking the above into account, the magnitude of impact can be considered low adverse.</p> <p>However, with warning signage and the implementation of measures within the final CTMP, such as speed awareness (i.e. drivers of all vehicles will be encouraged to drive in a safe and defensive manner at all times), the magnitude of impact can</p>

Location reference	Highway link	HGV Percentage impact (%)	Sensitivity	Review of pedestrian amenity
				<p>be reduced to negligible adverse overall and with low sensitivity, the resulting level of effect on pedestrian amenity would be negligible adverse, which is not significant in terms of the EIA Regulations.</p>
28	Horbling Lane/Midville Road/Fodderdyke Lane	109.0	Medium	<p>For large section of the length of these highway links, pedestrian footfall is likely to be very low and where footfall is likely (Eastville and Stickney) there're are footways on at least one side of the carriageway.</p> <p>As the percentage increase in HGVs is only marginally above the 100% threshold for formal assessment, the magnitude of impact can be considered low adverse and with medium sensitivity, would result in an effect that is minor adverse, which is not significant in terms of the EIA Regulations</p>
33	Common Road	2,255.6	Low	<p>The main pedestrian footfall will be at the section closest to the A52 where there are number of residential properties, accessing the local facilities on the other side of the A52. The carriageway is relatively narrow and there are no footways. The speed limit is 60mph.</p>

Location reference	Highway link	HGV Percentage impact (%)	Sensitivity	Review of pedestrian amenity
34	Common Road (near A52)	3,157.8	Low	<p>Taking the above into account, the magnitude of impact can be considered medium adverse.</p> <p>However, with warning signage and the implementation of measures within the final CTMP, such as speed awareness (i.e. drivers of all vehicles will be encouraged to drive in a safe and defensive manner at all times), the magnitude of impact can be reduced to low adverse overall and with low sensitivity, the resulting level of effect on pedestrian amenity would be minor adverse, which is not significant in terms of the EIA Regulations.</p>
36	West End Road	261.5	Low	<p>The main pedestrian footfall will be at the section closest to the A52 where there are number of residential properties, accessing the local facilities on the A52. The carriageway is relatively narrow and there are narrow footways. The speed limit is 30mph and the route is used by HGVs.</p> <p>Taking the above into account, the magnitude of impact can be considered medium adverse.</p> <p>However, with warning signage and the implementation of measures within the final</p>

Location reference	Highway link	HGV Percentage impact (%)	Sensitivity	Review of pedestrian amenity
				<p>CTMP, such as speed awareness (i.e. drivers of all vehicles will be encouraged to drive in a safe and defensive manner at all times), the magnitude of impact can be reduced to low adverse overall and with low sensitivity, the resulting level of effect on pedestrian amenity would be minor adverse, which is not significant in terms of the EIA Regulations.</p>
37	Cut End Road	339.0	High	<p>Pedestrian footfall is likely to be very low and whilst there are no footways and the carriageway is relatively narrow, there are verges intermittently along the road.</p> <p>Taking the above into account, the magnitude of impact can be considered low adverse.</p> <p>However, with warning signage and the implementation of measures within the final CTMP, such as speed awareness (i.e. drivers of all vehicles will be encouraged to drive in a safe and defensive manner at all times), the magnitude of impact can be reduced to negligible adverse overall and with high sensitivity, the resulting level of effect on pedestrian amenity would be minor adverse, which is not significant in terms of the EIA Regulations.</p>

Location reference	Highway link	HGV Percentage impact (%)	Sensitivity	Review of pedestrian amenity
39	Millfield Lane East to Wyberton Roads	956.5	Medium	<p>Pedestrian footfall is likely to be very low and whilst there are no footways and the carriageway is relatively narrow, there are verges intermittently along the local access route between the A16 and the Onshore ECC.</p> <p>Taking the above into account, the magnitude of impact can be considered low adverse.</p> <p>However, with warning signage and the implementation of measures within the final CTMP, such as speed awareness (i.e. drivers of all vehicles will be encouraged to drive in a safe and defensive manner at all times), the magnitude of impact can be reduced to negligible adverse overall and with medium sensitivity, the resulting level of effect on pedestrian amenity would be minor adverse, which is not significant in terms of the EIA Regulations.</p>
40	Station Road to Marsh Road	1,519.1	High	<p>The effect of pedestrian amenity would be felt the most on Station Road, where there will be some pedestrian movements between the houses/the wider area and the playground and the houses and the local facilities at Kirton; however, there are footways, informal crossing points and a controlled</p>

Location reference	Highway link	HGV Percentage impact (%)	Sensitivity	Review of pedestrian amenity
				<p>crossing at the A16. Therefore, the sensitivity can be reduced to medium.</p> <p>The average increase in HGVs over the core 42-month period associated with the construction of the Project (31 per day, or around three movements per hour), and with warning signage and the implementation of measures within the final CTMP, such as speed awareness (i.e. drivers of all vehicles will be encouraged to drive in a safe and defensive manner at all times), the magnitude of impact can be considered to be low adverse.</p> <p>With medium sensitivity, the resulting level of effect on pedestrian amenity would be minor adverse, which is not significant in terms of the EIA Regulations.</p>

Location reference	Highway link	HGV Percentage impact (%)	Sensitivity	Review of pedestrian amenity
41	Wash Road/Craven's Lane	1,519.1	High	<p>Pedestrian footfall is likely to be very low and whilst there are no footways and the carriageway is narrow, there are verges intermittently along the local access route between the A17 and the Onshore ECC.</p> <p>Taking the above into account, the magnitude of impact can be considered low adverse.</p> <p>However, with warning signage and the implementation of measures within the final CTMP, such as speed awareness (i.e. drivers of all vehicles will be encouraged to drive in a safe and defensive manner at all times), the magnitude of impact can be reduced to negligible adverse overall and with high sensitivity, the resulting level of effect on pedestrian amenity would be minor adverse, which is not significant in terms of the EIA Regulations.</p>
53	A16 north of A1028/A1104	100.2	Medium	<p>There is unlikely to be any pedestrian footfall on these highway links as they are principal 'A' road with a baseline daily traffic in excess of 7.500 vehicles and only minor sections of footway at some locations where there are properties or other land uses.</p>
54	A1028 between A158 and A16	164.2	Low	
55	A158 between A1028 and A16	116.8	Low	
56	A158 (west of the A16	215.2	Low	

Location reference	Highway link	HGV Percentage impact (%)	Sensitivity	Review of pedestrian amenity
				<p>Taking the above into account i.e. unlikely to be any pedestrians, the magnitude of impact can be considered negligible adverse, the medium sensitivity can be reduced to low, which would result in an effect that is negligible adverse, which is not significant in terms of the EIA Regulations.</p> <p>With warning signage and the implementation of measures within the final CTMP, such as speed awareness (i.e. drivers of all vehicles will be encouraged to drive in a safe and defensive manner at all times), the magnitude of impact would be further reduced.</p>
50	A16 between A52 (Boston) and A155	148.2	Medium	Principal 'A' road with a baseline daily traffic flow of between around 7,000 and 9,000 vehicles), with footways where there is likely to be pedestrian activity, with some separated by a verge.
52	A16 between A158 and A1028	134.3	Low	<p>Taking the above into account, the magnitude of impact can be considered negligible adverse, the medium sensitivity can be reduced to low, which would result in an effect that is negligible adverse, which is not significant in terms of the EIA Regulations.</p>

Location reference	Highway link	HGV Percentage impact (%)	Sensitivity	Review of pedestrian amenity
				<p>With warning signage and the implementation of measures within the final CTMP, such as speed awareness (i.e. drivers of all vehicles will be encouraged to drive in a safe and defensive manner at all times), the magnitude of impact would be further reduced.</p>
60	Lincoln Road Skegness	127.7	High	<p>The number of vehicle movements associated with the construction of the Project forecast to use Lincoln Road in Skegness is a sensitivity test, as the intention is for the temporary haul road between the A158 and Low Road (east of Croft) to be constructed to allow construction vehicles to access the A52 without routeing through Skegness.</p> <p>Whilst there may be some construction vehicle movements through Skegness before the temporary haul road between the A158 and Low Road (east of Croft) has been constructed, this would not be at the peak period of construction (and there would be no movements through Skegness once it is open).</p> <p>Taking the average increase in HGVs over the core 42-month period associated with the construction of the Project (33 per day, or around three movements per hour), and since this would be for a</p>

Location reference	Highway link	HGV Percentage impact (%)	Sensitivity	Review of pedestrian amenity
				<p>short duration, the magnitude of impact can be considered to be negligible adverse and with high sensitivity would result in an effect that is minor adverse, which is not significant in terms of the EIA Regulations.</p>
61	Low Road (east of Croft)	1,764.6	Medium	<p>Whilst there are likely to be very few pedestrian movements on Low Road, the amenity of pedestrians using the narrow footway at the eastern end of Low Road may be compromised with the Project construction vehicle movements, particularly HGVs and is therefore considered to be a medium magnitude of impact.</p> <p>With the footway and informal crossing with tactile paving in the vicinity of the residential properties, warning signage, the implementation of measures within the final CTMP and since construction vehicles would be travelling at very low speed in the vicinity of the caravan park and residential properties, the magnitude of impact could be reduced to low and with medium sensitivity would result in an effect that is minor adverse, which is not significant in terms of the EIA Regulations.</p>

188. In summary, there would be **no significant** effects on pedestrian amenity on all highway links.

27.8.1.6 Dust and Dirt

189. In Table 27.18, less than a 10% increase in total traffic is considered a negligible magnitude of impact of the potential effects of dust and dirt. The level of effects on these highway links is the same as for community severance and vulnerable road users and road safety as set out in Table 27.30.

190. In summary, there would be a **negligible** or **minor adverse** effect on vulnerable road users and road safety on all the highway links in Table 27.30, which is **not significant** in terms of the EIA Regulations.

191. Table 27.37 summarises the level of effects on the highway links with a low magnitude of impact (11% to 30% increase in total traffic).

Table 27.37 Low Magnitude of Impact (Dust and Dirt) – Summary of Effects

Location Reference	Highway Link	Sensitivity	Level of Effect
21	Gunby Lane	Low	Minor
22	B1195 (Irby in the Marsh)	Low	Minor
23	B1195 (Thorpe St. Peter)	Low	Minor
25	Brewster Lane	Low	Minor
26	Collision Gate	Medium	Minor
27	Scald Gate	Low	Minor
28	Horbling Lane	Medium	Minor
37	Cut End Road	Medium	Minor
52	A16 between A158 and A1028	Low	Minor

192. As Table 27.37 shows, the level of effect in terms of dust and dirt on Gunby Lane, the B1195, Horbling Lane, Cut End Road and Pinfold lane would be **negligible** or **minor adverse**, which is **not significant** in terms of the EIA Regulations.

193. Table 27.38 summarises the level of effects on the highway links with a medium magnitude of impact (31% to 60% increase in total traffic).

Table 27.38 Medium Magnitude of Impact (Dust and Dirt) – Summary of Effects

Location Reference	Highway Link	Sensitivity	Level of Effect
6	Listoft Lane	Low	Minor
27	Scald Gate	Low	Minor
29	Fen Bank	Low	Minor
31	Howgarth Lane	Low	Minor
36	West End Road	Low	Minor
39	Millfield Lane East to Wyberton Roads	Low	Minor

Location Reference	Highway Link	Sensitivity	Level of Effect
40	Station Road to Marsh Road	High	Major
41	Wash Road/Craven's Lane	High	Major
61	Low Road (east of Croft)	Medium	Moderate

194. As Table 27.38 shows Listoft Lane, Collision Gate, Fen Bank, Howgarth Lane, West End Road, West End Road and Millfield Lane East to Wyberton Roads, the level of effect in terms of community severance would be **minor adverse** and therefore **not significant** in terms of EIA regulations.
195. The level of effect in terms of community severance on Low Road (east of Croft) would be moderate adverse and therefore significant in terms of EIA regulations.
196. The level of effect in terms of dust and dirt on Station Road to Marsh Road would be major adverse and on Wash Road/Craven's Lane and Low Road (east of Croft) would be moderate adverse and therefore significant in terms of EIA regulations.
197. The main receptors on Low Road that would be affected by dust and dirt are the residents of the properties and the occupiers of the caravan park located over 1.5km from the Onshore ECC. With wheel washing and other dust and dirt restricting measures implemented in the final CTMP, the likelihood of dust and dirt from HGVs impacting the residents and occupiers of the caravans would be reduced and the magnitude of impact can be reduced to be low adverse. As Low Road has medium sensitivity, this would result in a **minor adverse** effect, which is **not significant** in terms of the EIA Regulations.
198. Station Road to Marsh Road is categorised as having high sensitivity due to the proximity of the playground on Station Road; however, in terms of sensitivity to dust and dirt, this can be reduced to low, as the playground is well set back from the road, with some mature vegetation providing a buffer. Also, with wheel washing undertaken for vehicles leaving the construction accesses (AC-40/AC-41) other dust and dirt restricting measures implemented in the final CTMP and the low speed of HGVs along the local construction access route adjacent to the residential properties on Nidd's Lane, which are close to the carriageway, the magnitude of impact can be reduced to low.
199. Therefore, this would result in a **negligible adverse** effect, which is **not significant** in terms of the EIA Regulations.
200. The main receptors on Wash Road that would be affected by dust and dirt are the residents of the dwellings located at the A17 end of the local construction access route, approximately 1km from the Onshore ECC. With wheel washing and other dust and dirt restricting measures implemented in the final CTMP, the likelihood of dust and dirt from HGVs impacting the residents would be reduced and the magnitude of impact can be reduced to be low adverse. As Wash Road has medium sensitivity, this would result in a **minor adverse** effect, which is **not significant** in terms of the EIA Regulations.

201. Table 27.39 summarises the level of effects on the highway links with a medium magnitude of impact (greater than 60% increase in total traffic).

Table 27.39 High Magnitude of Impact (Dust and Dirt) – Summary of Effects

Location Reference	Highway Link	Sensitivity	Level of Effect
25	Brewster Lane	Low	Moderate
26	Collision Gate	Low	Moderate
33	Common Road	Low	Moderate
34	Common Road (near A52)	Low	Moderate
35	Ings Road	Low	Moderate
38	Pinfold Lane	Low	Moderate
62	Marsh Road (Surfleet Bank)	Low	Moderate

202. As Table 27.39 shows, the level of effect in terms of dust and dirt on these highway links would be moderate adverse and therefore significant in terms of EIA regulations. However, given these highway links are rural, with very few residential dwellings the sensitivity can be reduced to negligible resulting in a **minor adverse** level of effect, which is **not significant** in terms of EIA Regulations. With wheel washing and other dust and dirt restricting measures implemented in the final CTMP, this would further reduce any likely effects of dust and dirt.

203. In summary, there would be no significant effects as a result of dust and dirt associated with the Onshore ECC.

27.8.1.7 Users of Public Rights of Way

204. The assessment of the potential effects on users of PRoW is presented in:

Table 27.40 Assessment of Users of PRoW in Segment 1 – Summary of Effects;

- Table 27.41 Assessment of Users of PRoW in Segment 2 – Summary of Effects;
- Table 27.42 Assessment of Users of PRoW in Segment 3 – Summary of Effects;
- Table 27.43 Assessment of Users of PRoW in Segment 4 – Summary of Effects;
- Table 27.44: Assessment of Users of PRoW in Segment 5 – Summary of Effects;
- Table 27.45 Assessment of Users of PRoW in Segment 6 – Summary of Effects;
- Table 27.46 Assessment of Users of PRoW in Segment 10 – Summary of Effects;
- Table 27.47 Assessment of Users of PRoW in Segment 11 – Summary of Effects;
- Table 27.48 Assessment of Users of PRoW in Segment 12 – Summary of Effects;
- Table 27.49 Assessment of Users of PRoW in Segment 13 – Summary of Effects; and
- Table 27.50 Assessment of Users of PRoW in Segment 14 – Summary of Effects.

The assessment is based on the medium to high sensitivity across the network in the study area, as described in paragraph 130 and using the criteria in Table 27.19 where a PRow crosses a highway link.

Table 27.40 Assessment of Users of PRow in Segment 1 – Summary of Effects

PRow	Impact	Assessment	Magnitude of impact	Level of effect
Ande/19/1	Would cross a temporary duct storage compound	The route would be kept open using a managed crossing (see proposed management measures in the Outline PAMP (Document reference 8.17))	Negligible	Minor adverse (not significant)
Ande/19/2	Would be crossed by haul road/Cable trenches and temporary duct storage area	The route would be kept open using a managed crossing (see proposed management measures in the Outline PAMP (Document reference 8.17))	Negligible	Minor adverse (not significant)
Ande/19/3	Would be crossed by haul road/and would cross a Cable Installation Compound (CIC) and temporary duct storage area	The route would be kept open using a managed crossing (see proposed management measures in the Outline PAMP (Document reference 8.17))	Negligible	Minor adverse (not significant)
Chap19/2	Would be crossed by haul road	The route would be kept open using a managed crossing (see proposed management measures in the Outline PAMP (Document reference 8.17))	Negligible	Minor adverse (not significant)
Chap21/4	Would be crossed by haul road	The route would be kept open using a managed crossing (see proposed management measures in the Outline PAMP (Document reference 8.17))	Negligible	Minor adverse (not significant)

PRoW	Impact	Assessment	Magnitude of impact	Level of effect
Chap/1180/1	Would be crossed by haul road	The route would be kept open using a managed crossing (see proposed management measures in the Outline PAMP (Document reference 8.17))	Negligible	Minor adverse (not significant)
Hogs/1181/1	Would be crossed by haul road	The route would be kept open using a managed crossing (see proposed management measures in the Outline PAMP (Document reference 8.17))	Negligible	Minor adverse (not significant)
Hogs/57/1	Would be crossed by haul road	The route would be kept open using a managed crossing (see proposed management measures in the Outline PAMP (Document reference 8.17))	Negligible	Minor adverse (not significant)
Hogs/58/2	Would be crossed by haul road and cable trenches	<p>The route would be temporary closed with a temporary diversion via Hogs/57/1.</p> <p>The temporary diverted route (around the work area at this location for the duration of the construction works) would be <250m additional journey length.</p>	Low	Minor adverse (not significant) to Moderate adverse (significant)

Table 27.41 Assessment of Users of PRow in Segment 2 – Summary of Effects

PRoW	Impact	Assessment	Magnitude of impact	Level of Effect
Hogs/48/1	Could be crossed by cable trenching, would cross a temporary CIC.	The route would be temporary closed with a temporary diversion. The temporary diverted route (around the work area at this location for the duration of the construction works) would be <50m additional journey length.	Negligible	Minor adverse (not significant)

Table 27.42 Assessment of Users of PRow in Segment 3 – Summary of Effects

PRoW	Impact	Assessment	Magnitude of impact	Level of Effect
BurM/265/2	Would be crossed by haul road	The route would be kept open using a managed crossing (see proposed management measures in the appended Outline PAMP (Document reference: 8.17))	Negligible	Minor adverse (not significant)

Table 27.43 Assessment of Users of PRoW in Segment 4 – Summary of Effects

PRoW	Impact	Assessment	Magnitude of impact	Level of Effect
BurM/260/1	Would be crossed enabling works access	The route would be kept open using a managed crossing(see proposed management measures in the appended Outline PAMP (Document reference: 8.17))	Negligible	Minor adverse (not significant)
BurM/261/3	Would be crossed by haul road	The route would be kept open using a managed crossing(see proposed management measures in the appended Outline PAMP (Document reference: 8.17))	Negligible	Minor adverse (not significant)
BurM/263/2	Would be crossed by the haul road, would cross a temporary CIC.	<p>The section of the route adjacent to Billgate Lane would be kept open using a managed crossing (see proposed management measures in the Outline PAMP (Document reference 8.17))</p> <p>The section of the route crossed by the haul road and cable trenches and temporary CIC would be temporary closed with a temporary diversion.</p> <p>The temporary diverted route (around the work area at this location for the duration of the construction works) would be <250m additional journey length.</p>	Low	Minor adverse (not significant) to Moderate adverse (significant)

Table 27.44: Assessment of Users of PRoW in Segment 5 – Summary of Effects

PRoW	Impact	Assessment	Magnitude of impact	Level of Effect
Crof/264/1	Would be crossed by haul road	The route would be kept open using a managed crossing(see proposed management measures in the Outline PAMP (Document reference 8.17)).	Negligible	Minor adverse (not significant)
Crof/276/4	Would be crossed by haul road, could be crossed by cable trenches and would be crossed by enabling works access.	<p>The section of the route adjacent to Church Lane would be kept open using a managed crossing(see proposed management measures in the Outline PAMP (Document reference 8.17)).</p> <p>The section of the route crossed by haul road and cable trenches would be temporary closed with a temporary diversion.</p> <p>The temporary diverted route (around the work area at this location for the duration of the construction works) would be <250m additional journey length.</p>	Low	Minor adverse (not significant) to Moderate adverse (significant)
Crof/276/2	Would be crossed by haul road and cable trenches	The route would be temporary closed with a temporary diversion.		

PRoW	Impact	Assessment	Magnitude of impact	Level of Effect
		The temporary diverted route ((around the work area at this location for the duration of the construction works) would be <250m additional journey length.		
Croft/276/3	Would be crossed by haul road and cable trenches	The route would be temporary closed with a temporary diversion. The temporary diverted route ((around the work area at this location for the duration of the construction works) would be <250m additional journey length.		

Table 27.45 Assessment of Users of PRoW in Segment 6 – Summary of Effects

PRoW	Impact	Assessment	Magnitude of impact	Level of Effect
WStM/371/1	Would be crossed by haul road.	The route would be kept open using a managed crossing(see proposed management measures in the appended Outline PAMP (Document reference: 8.17))	Negligible	Minor adverse (not significant)

Table 27.46 Assessment of Users of PRoW in Segment 10 – Summary of Effects

PRoW	Impact	Assessment	Magnitude of impact	Level of Effect
Fish/12/2				

PRoW	Impact	Assessment	Magnitude of impact	Level of Effect
Fish/11/5	Above trenchless crossing. The potential impact would be from an increase in vehicles at the crossing at Cut End Road.	This route would be kept open, with warning signage at the crossing point at Cut End Road (see proposed management measures in the Outline PAMP (Document reference 8.17)).	Negligible	Minor adverse (not significant)

Table 27.47 Assessment of Users of PRoW in Segment 11 – Summary of Effects

PRoW	Impact	Assessment	Magnitude of impact	Level of Effect
Wybe/2/4	Would be crossed by AC-40 and AC-41	This route would be kept open, with warning signage at AC-40 and AC-41 (see proposed management measures in the Outline PAMP (Document reference 8.17)).	Negligible	Minor adverse (not significant)

Table 27.48 Assessment of Users of PRoW in Segment 12 – Summary of Effects

PRoW	Impact	Assessment	Magnitude of impact	Level of Effect
Kirt/1/5	Would be crossed by haul road	The route would be kept open using a managed crossing (see proposed management measures in the Outline PAMP (Document reference 8.17)).	Negligible	Minor adverse (not significant)

PRoW	Impact	Assessment	Magnitude of impact	Level of Effect
Fosd/8/1	Would be crossed by enabling access. Would be crossed by AC-44	This route would be kept open using managed crossing, with warning signage at the enabling works access crossing point at AC-44 (see proposed management measures in the Outline PAMP (Document reference 8.17)).	Negligible	Minor adverse (not significant)

Table 27.49 Assessment of Users of PRoW in Segment 13 – Summary of Effects

PRoW	Impact	Assessment	Magnitude of impact	Level of Effect
Fosd/2/2	Would be crossed by haul road	The routes would be kept open using a managed crossing(see proposed management measures in the Outline PAMP (Document reference 8.17))	Negligible	Minor adverse (not significant)
Fosd/2/1	Shared with a construction access and is part of the Macmillan Way.	Vehicles already use this access and any construction traffic associated with the Project would be moving very slowly due to the tight bend at this location.	High, reduced to medium, given the assumed very low baseline and likely high percentage impact – as set out in Paragraph 91)	Moderate adverse (significant) to Major adverse (significant)
Fosd/3/1		Whilst there is no baseline traffic data, given the limited uses it serves and taking into account on site observations, it can be assumed that the increase in vehicles associated with the construction of the Project is likely to be greater than 90%. However, the average number of daily HGVs (which would be the greatest impact of users of the PRoW)		

PRoW	Impact	Assessment	Magnitude of impact	Level of Effect
		<p>during the core 42-month construction programme associated with the Project is 11, which is around one every hour. Also, the majority of workforce vehicle movements would be at the start and end of the day, when there are likely to be fewer users on the PRoW.</p> <p>Signage would be provided to warn users of the construction traffic (see proposed management measures in the Outline PAMP (Document reference 8.17)) and the implementation of measures within the Outline CTMP (Document reference 8.15) such as driver awareness and timing of HGV movements.</p>		

Table 27.50 Assessment of Users of PRoW in Segment 14 – Summary of Effects

PRoW	Impact	Assessment	Magnitude of impact	Level of Effect
Wstn/4/1	Access to footpath on construction vehicle access route	No direct impact. Signage would be provided to warn users of the PRoW (see proposed management measures in the Outline PAMP (Document reference 8.17))	Negligible	Minor adverse (not significant)

PRoW	Impact	Assessment	Magnitude of impact	Level of Effect
Surf/9/1	Shared with construction vehicle access route	<p>Whilst there is no baseline traffic data, given the limited uses it serves and taking into account on site observations, it can be assumed that the increase in vehicles associated with the construction of the Project is likely to be greater than 90%.</p> <p>However, the average number of daily HGVs (which would be the greatest impact of users of the PRoW) during the core 42-month construction programme associated with the Project is 11, which is around one every hour. Also, the majority of workforce vehicle movements would be at the start and end of the day, when there are likely to be fewer users on the PRoW.</p> <p>Signage would be provided to warn users of the construction traffic (see proposed management measures in the Outline PAMP (Document reference 8.17)) and the implementation of measures within the Outline CTMP (Document reference 8.1.5) such as driver awareness and timing of HGV movements.</p>	High, reduced to medium, given the assumed very low baseline and likely high percentage impact – as set out in Paragraph 91)	Moderate adverse (significant) to Major adverse (significant)

205. Based on the analysis in Table 27.40 to Table 27.45 the temporary adverse effects on users of PRoW would be **negligible** or **minor** in significance for the majority of the routes, which is **not significant** in terms of the EIA Regulations.
206. The following routes have moderate or major adverse effects that can be considered significant:
- Hogs/58/2, Burm/263/2, Crof/276/4, Crof/276/3 and Crof/276/2 (summer only), due to the length of temporary diversion; and
 - Fosd/2/1, Fosd/3/1 and Surf/9/1 due to the route being shared by construction traffic associated with the Project.
207. The significant effects predicted where there are planned temporary diversions (see Outline PAMP (Document reference 8.17)), when the PRoW are considered to have high sensitivity in the summer months, as the maximum additional distance a user would have to walk using the diversion is around 170m, which would be up to an additional four minutes (based on a typical walking speed of 1.4 metre per second) and since the diversions would be for a temporary period only, using professional judgement, the magnitude of impact can be reduced to negligible. With medium to high sensitivity, temporary adverse effects on users on these PRoW would be **negligible** or **minor** in significance, which is **not significant** in terms of the EIA Regulations.
208. In addition to the implementation of measures within the final PAMP For the PRoW that would share the route with users of the PRoW, the following further mitigation measures would be implemented to ensure the safety of users:
- Providing a marked (and segregate, where possible) walkway for users;
 - One-way HGV movements only; and
 - A banks person at each end of the section of the route affected to manage the inbound and outbound HGVs, and halting movements until there are no users (and also halting users if a vehicle is approaching).
209. The specific details of the above would be discussed and agreed with LCC through the final PAMP.
210. Given the above the magnitude of impact can be further reduced to low, resulting in **minor adverse** impacts, which are **not significant** in terms of the EIA Regulations.

27.8.1.8 Abnormal Indivisible Loads (AILs)

Special Order AILs

211. The delivery of Special Order AILs will be small in number. The delivery route is anticipated to be between Port Sutton Bridge and the OnSS location and Surfleet Marsh.
212. An assessment of the anticipated vehicle type that would be used to transport the AIL between Port Sutton Bridge and the OnSS location is provided in Annex A of Volume 3, Appendix 27.1 Transport Assessment (document reference 6.3.27.1) using the following route:
- West Bank between the Port and Bridge Road;

- Bridge Road between West Bank and the A17;
 - A17 between Bridge Road and the A16;
 - A16 between the A17 and Surfleet Bank; and
 - Surfleet Bank.
213. Once the Port has been confirmed (post DCO consent), an Abnormal Load Assessment Report (ALAR) will be prepared which will set out the key points and issues associated with the selected route, to verify that the route is feasible for the delivery, subject to physical and operational mitigation works.
214. The ALAR will inform the traffic management measures that will need to be identified for the movement of the AIL. Prior to the movement of AIL, extensive public awareness is required to allow residents to plan and time their journeys to avoid disruption. The haulage Contractor shall remain responsible for obtaining all necessary permits from the relevant road and bridge authorities along the access route.
215. The movement of AILs will be timed to avoid periods of heavy traffic flow (i.e. for those that are able to be transported during the night) to minimise disruption to the public. Specific timing restrictions imposed by the police or local authority have not been determined at this stage.
216. The AIL delivery route would require the use of Bridge Road, which is the main access road for the Port of Sutton Bridge, which has low sensitivity. The AIL delivery route would also require the use of A17 and A16, which have low sensitivity.
217. Given the delivery of AILs would be delivered during periods of low traffic flows on the highway network, were possible and with the implementation of traffic management measures, the magnitude of impact is considered to be low and therefore, the resulting adverse effect would be **minor adverse** significance which is **not significant** in terms of the EIA Regulations.
218. To ensure that delays are managed and co-ordinated, prior to the movement of any AIL, the contractor would be required to submit notifications to the relevant authorities (police, highway authorities and bridge/structure owners) through the Electronic Service Delivery for Abnormal Loads (ESDAL). The ESDAL process would ensure the timing of AIL movements would be co-ordinated and (including the issuing of the required advanced notification to stakeholders).

Non-Special *Order AILs*

219. The delivery of the cable drums to the TJBs would use the construction vehicle access routes and the pre-installed haul road. The extent of the haul road required will be determined upon completion of the duct installation works, with a view to retaining only those sections of the haul road required for access to the joint bay locations for cable drums.
220. During the cable pulling works, a cable drum would typically be delivered by specialised transport such as a low loader, tractor, and drum trailer (See Plate 8.6 in Volume 1, Chapter 3: Project Description (document reference 6.1.3)).

221. Cable drum deliveries would be infrequent and traffic management measures, such as a pilot vehicle on the local construction vehicle access routes, would be implemented to ensure safety for other road users.
222. Taking the above into account, the sensitivity for all routes can be considered to be low and the magnitude of impact low, resulting in a **minor adverse** effect, which is **not significant** in terms of the EIA Regulations.

27.8.1.9 Decommissioning

223. Details surrounding the decommissioning phase are yet to be fully clarified. In addition, it is also recognised that policy, legislation and local sensitivities constantly evolve, which will limit the relevance of undertaking an assessment at this stage. Nevertheless, decommissioning activities are not anticipated to exceed the construction phase worst case criteria. In addition, there is potential for onshore cables to remain *in situ*, which would see a reduction in impacts and resulting level of significance in comparison to the assessment of construction effects.
224. Decommissioning activities are expected to occur for up to three years – however this will be driven primarily by offshore works. The decommissioning strategy will be reviewed over the design life of the Project and adapt to local sensitivities, policy, and legalisation.
225. The decommissioning methodology would be finalised nearer to the end of the lifetime of the Project, to be in line with current guidance, policy and legislation. Any such methodology would be agreed with the relevant authorities and statutory consultees.

27.9 Cumulative Impact Assessment

226. This cumulative impact assessment for Traffic and Transport has been undertaken in accordance with the methodology provided in Volume 3, Appendix 5.3 Onshore Cumulative Effects Assessment Approach (document reference 6.3.5.3).
227. The projects and plans selected as relevant ‘other developments’ to the assessment of cumulative impacts to Traffic and Transport are based upon a screening exercise undertaken on an initial long list of reasonably foreseeable other developments located within the Project’s zone of influence; be it consented schemes not built out or schemes for which planning consent is actively being sought.
228. Each project, plan or activity under these terms has been considered and scoped in or out on the basis of effect-receptor pathway, data confidence and the temporal and spatial scales involved.
229. The determination of the short list of other developments is documented in Appendix 5.3 (document reference 6.3.5.3) and for traffic and transport was based on the following factors:
- Distance from the traffic and transport study area, with those projects not forecast to generate any vehicle movements on the highway links assessed within this chapter; and

- via the A16 and A52 (east) – 22%

235. For the purposes of including a qualitative assessment of the NGSS, it has also been assumed that this would be constructed at the same time as the Project OnSS as a robust assessment.

27.9.1 Cumulative Driver Severance and Delay - Peak Hour Traffic Impact

236. A screening process has been undertaken for each construction vehicle route highway link which are forecast to be used by the committed residential developments, the proposed NSIP, the NGSS (indicatively) and the construction of the Project, to identify routes that are likely to have sufficient changes in traffic flows in the peak hours on the highway network (which fall between 07:00 to 09:00 and 16:00 to 18:00 at different locations on the highway network) and therefore require a cumulative impact assessment for driver severance and delay.

27.9.1.1 B/20/0488 and B/20/0489

237. As there were no forecast vehicle movements available for these planning applications, forecast vehicle movements, the following two-way morning evening peak hour residential vehicle trip rates per dwelling have been identified from the TRICS database:

- AM peak – 0.449; and
- PM peak – 0.452.

238. The above trip rates have been used to estimate two-way peak hour vehicle movements for the two developments (combined) and have been distributed onto the local highway network, using broad assumptions.

239. Of the 30 two-way vehicle movements in either peak hour, 50% have been distributed to Boston and 50% to Skegness. The 50% of vehicle movements to and from Boston (182) are assumed to use Fishtoft Road towards Boston, which connects to the A16 (highway link 58) via Skirbeck Road and the A1138. As a worst case, it is assumed the 15 vehicle movements would use the A16 in Boston.

240. The 50% of vehicle movements to and from Skegness (15) are assumed to use Clampgate Road, Church Road/Church End Road and the A52 (highway links 13 to 18).

27.9.1.2 N/084/0809/19

241. Using Table 7 from the Transport Assessment prepared by local transport projects (2019) to support N/084/0809/19, 48 two-way vehicles were forecast in the morning peak hour and 35 two-way vehicles in the evening peak hour. The Transport Assessment does not provide a clear traffic distribution and assignment onto the LRN; however, suggests the vehicle movements are likely to be evenly split between each direction.

242.

Therefore, based on the above and using the 48 two-way vehicles in the morning peak hour as a worst case, 50% have been distributed to Skegness and 50% towards Louth/Cleethorpes/Grimsby and to ensure a robust assessment, 50% of the vehicle movements toward Skegness have assumed to continue to Boston. This would result in the following two-way vehicle movements:

- 24 on the A52 between Hogsthorpe and Skegness (highway links 4 and 5);
- 12 on the A52 between Skegness and Boston (highway links 12 to 18);
- 12 on the A16/A52 in Boston (highway links 58 and 59); and
- 24 on the B1449, A1104, A16 (highway links 1, 2, 3 and 53).

27.9.1.3 Boston Alternative Energy Facility (BAEF)

243. In the Traffic and Transport Chapter of the ES prepared for the DCO application for the BAEF scheme, as a worst case, all construction employees arriving/departing the construction site are assigned to each junction during the highway network peak hours. However, it is noted in the chapter that:

“In reality, employees are likely to arrive before 8am and depart after 8pm in accordance with the defined working hours of 8am to 8pm (with option of 7am to 7pm). As such employee traffic is likely to not occur within the network peak hour flows and the impact on the junction is likely to be reduced.”

244. For the peak hour cumulative assessment, the following two-way movements have been identified from the BAEF ES (Appendix 19.5 Junction Modelling Matrices):

- 28 on the A16 south of Wallace Way (highway link 43);
- 28 on the A16 south of the A17 (highway link 48);
- 184 (including 24 HGVs) on the A16 south of Boston (highway link 42)
- 110 (including 24 HGVs) on the A16 and A52 in Boston (highway links 58 and 59); and
- 74 on the A1121 (highway link 49).

27.9.1.4 National Grid Substation

245. The highway links assessed in this chapter assumed to be affected by HGVs associated with the construction of NGSS, would be the following, which are part of the Project core construction vehicle access routes:

- A17 north of the River Welland (highway link 44);
- A17 south of the River Welland (highway link 45);
- A17 between the A16 and A1121 (highway link 46)
- A17 west of the A1121 (highway link 47); and
- A16 south of the A17 (highway link 48).

246. For the NGSS workforce vehicle movements, the core construction vehicle access routes across the study area would be affected, with the exception of the A158, the A52 between Hogsthorpe and Skegness, the A1028, B1449 and A1104, which are unlikely to be used to access the location of the NGSS from the key locations assumed where the construction workforce would reside.
247. Whilst the potential cumulative vehicle movements for the construction of the Project and the NGSS would not affect the majority of the local construction vehicle access routes assessed in this chapter for ODOW construction traffic, there is the potential for cumulative effects on Marsh Road (Surfleet Bank), should this be selected as an access route for the construction of the NGSS. However, as the baseline traffic levels on Marsh Road are extremely low (only one or two vehicle movements in the peak hours on the LRN) and since the peak hour vehicle movements associated with the construction of the Project is five vehicles, taking the estimation of peak hour construction vehicle movements for the NGSS based on the peak hour vehicle movements associated with the construction of the Project OnSS (14), it can be concluded that there would be no impacts on driver severance and delay on Marsh Road (Surfleet Bank),
248. Whilst the Project core construction vehicle access routes that are estimated to be used for vehicle movements associated with the construction of the NGSS (paragraph 245) are capable of accommodating high volumes of traffic, it is acknowledged that there may be sensitivities during the peak hours, particularly through Boston. Therefore, once construction programmes for the Project and NGSS are confirmed post consent, discussions between each party and LCC can be undertaken to ensure the impact on the core construction vehicle access routes is minimised during the peak hours on the highway network, through the implementation of co-ordinated HGV routeing and timings, where required, and a range of sustainable travel plan measures.

27.9.1.5 Peak Hour Cumulative Summary

249. The cumulative peak hour traffic flows with the Project are presented in Table 27.51 and the peak hour cumulative impact assessment, using the morning peak hour (which is typically the busiest peak hour), against the future baseline (2027) flow is presented in Table 27.52.

Table 27.51 Cumulative Peak Hour Traffic Flows

Location Ref	Highway Link	B/20/0488 and B/20/0489	N/084/080 9/19	BAEF	Total	ODOW (the Project)	Cumulative Traffic Flow
1	B1449 Thurlby Road		24		24	16	40
2	B1449 Long Lane		24		24	16	40
3	A1104 (Alford)		24		24	16	40
4	A52 (west of Hogsthorpe)		24		24	16	40
5	A52 (south of Marsh Lane)		24		24	1	25
13	A52 (east of Croft)	15	12		27	19	46
14	A52 (Wainfleet)	15	12		27	22	49
15	A52 (Holland Lane)	15	12		27	18	45
16	A52 (Wrangle)	15	12		27	23	50
17	A52 (Butterwick)	15	12		27	23	50
18	A52 Wainfleet Road (east of AC-34/AC-35)	15	12		27	50	77
19	A52 Wainfleet Road (west of AC-34/AC-35)		12			50	50
42	A16 (north of AC-39)			184	184	17	201
43	A16 (south of AC-39)			184	184	36	220
48	A16 (south of A17)			28	28	43	71
49	A1121			74	74	11	85
53	A16 (north of A1104)		24		20	57	77
58	A16 (Boston)	15	12	110	135	47	182
59	A52 (Boston)	15	12	110	135	19	154

Table 27.52 Cumulative Impact Assessment (Morning Peak Hour)

Location Reference	Highway Link	Future Baseline (2027 Total Flow)	Cumulative Traffic flow	Total	Percentage (%)	Impact
1	B1449 Thurlby Road	195	40		20.5	
2	B1449 Long Lane	256	40		15.6	
3	A1104 (Alford)	380	40		10.5	
4	A52 (west of Hogsthorpe)	713	40		5.6	
5	A52 (south of Marsh Lane)	340	25		7.4	
13	A52 (east of Croft)	325	46		14.2	
14	A52 (Wainfleet)	620	49		7.9	
15	A52 (Holland Lane)	620	45		7.3	
16	A52 (Wrangle)	358	50		14.0	
17	A52 (Butterwick)	494	50		10.1	
18	A52 Wainfleet Road (east of AC-34/AC-35)	713	77		10.8	
19	A52 Wainfleet Road (west of AC-34/AC-35)	713	50		7.0	
42	A16 (north of AC-39)	1,849	201		10.9	
43	A16 (south of AC-39)	1,849	220		11.9	
48	A16 (south of A17)	1,304	71		5.4	
49	A1121	624	85		13.6	
53	A16 (north of A1104)	468	77		16.5	
58	A16 (Boston)	3,357	182		5.4	
59	A52 (Boston)	1,415	154		10.9	

27.9.1.6 Further Assessment – Cumulative Peak Hour Traffic Impacts

250. Based on the peak hour cumulative impact percentages in Table 27.52, using the threshold of 30 two-way vehicle movements in an hour, all the highway links would require further assessment with the exception of:

- A52 (south of Marsh Lane)

251. The range in cumulative two-way peak hour vehicle movements ranges between 40 and 220, with the percentage increase on the future baseline (2027) morning peak hour traffic flows between 5.4% and 16.5%.

252. Given the robust assessment of the forecast peak hour traffic flows associated with the construction of BAEF (see paragraph 243) and since the maximum cumulative percentage increase is 16.5% (on the A16 north of the A1104), which is significantly less than the 30% threshold for the increase in total vehicles (Rule 1 of the EIA Guidelines) for formal assessment under EIA Regulations, with the implementation of CTMPs associated with BAEF and the Project, peak hour traffic would be minimised and monitored and therefore it is not considered that any further peak hour cumulative impact assessment is required.

27.9.2 AADT Cumulative Impact Assessment

27.9.2.1 B/20/0488 and B/20/0489

253. Using a daily residential vehicle trip rate per dwelling of 5.5, estimated daily vehicle movements have been derived and distributed onto the local highway network, using broad assumptions, as per the cumulative peak hour assessment.

254. Of the 364 daily two-way vehicle movements associated with the 66 dwellings, 50% have been distributed to Boston and 50% to Skegness. The 50% of vehicle movements to and from Boston (182) are assumed to use Fishtoft Road towards Boston, which connects to the A16 (highway link 76) via Skirbeck Road and the A1138. As a worst case, it is assumed the 182 vehicle movements are using the A16 in Boston.

255. The 50% of vehicle movements to and from Skegness (182) are assumed to use Clampgate Road, Church Road/Church End Road and the A52 (highway links 13 to 19).

27.9.2.2 N/084/0809/19

256. Using Table 7 from the Transport Assessment prepared by local transport projects (2019) to support N/084/0809/19, 380 two-way vehicles were forecast over between 07:00 and 19:00 (which would be the same working hours during construction of the Project). The Transport Assessment does not provide a clear traffic distribution and assignment onto the LRN; however, suggests the vehicle movements are likely to be evenly split between each direction.

257. Therefore, based on the above and using the 380 two-way vehicles, 50% have been distributed to Skegness and 50% towards Louth/Cleethorpes/Grimsby and to ensure a robust assessment, 50% of the vehicle movements toward Skegness have assumed to continue to Boston. This would result in the following two-way vehicle movements:

- 190 on the A52 between Hogsthorpe and Skegness (highway links 4 and 5);

- 95 on the A52 between Skegness and Boston (highway links 12 to 18);
- 95 on the A16/A52 in Boston (highway links 58 and 59); and
- 190 on the B1449, A1104, A16 (highway links 1, 2, 3 and 53)

27.9.2.3 Boston Alternative Energy Facility

258. Using Table 19-18 of the Traffic and Transport Chapter of the ES prepared for the DCO application for the BAEF scheme, the following average daily two-way vehicle movements have been identified:

- 126 on the A16 south of Wallace Way (highway link 43);
- 126 on the A16 south of the A17 (highway link 48);
- 333 (including 24 HGVs) on the A16 south of Boston (highway link 42)
- 201 (including 24 HGVs) on the A16 and A52 in Boston (highway links 58 and 59); and
- 132 on the A1121 (highway link 49).

27.9.2.4 National Grid Substation

HGVs

259. The forecast percentage impacts of daily construction vehicle movements associated with the Project (i.e. construction of the Onshore ECC, 400kV Connection and the OnSS.) on the A17 (highway links 44 to 47) that are assumed would also be affected by HGVs for the construction of the NGSS range between 1.2% and 1.8% (total traffic) and between 10.2% and 15.9% (HGVs). This is significantly below the 30% threshold for the increase in total vehicles or HGVs (Rule 1 of the EIMA Guidelines) for formal assessment under EIA Regulations. Therefore, the addition of HGVs associated with the construction of the NGSS (which would be between 2.0% and 3.4%, based on the percentage increases associated with the construction of the Project OnSS alone) would not result in this threshold being breached.

260. For the A16 south of the A17 (highway link 48), which is also predicted to be affected by the BAEF scheme, the cumulative percentage impacts are 2.9% (total traffic) and 21.3% (HGVs) and significantly below the 30% threshold for the increase in total vehicles or HGVs (Rule 1 of the EIMA Guidelines) for formal assessment under EIA Regulations. Therefore, the addition of HGVs associated with the construction of the NGSS (which would be 1.9% based on the percentage increases associated with the construction of the Project OnSS alone) would not result in this threshold being breached. Also, the percentage impacts of the Project OnSS on this highway link would actually be less in reality, as the two-way flow is assumed at AC-48, which includes vehicle movements to the north and south of this point and therefore an overestimation of the increase in HGVs on the baseline.

261. Taking the above into account, it is unlikely that the cumulative impact including the HGVs associated with the construction of the NGSS would lead to any significant effects.

Workforce

262. The forecast percentage impacts of daily construction vehicle movements associated with the Project (i.e. construction of the Onshore ECC, 400kV Connection and the OnSS.) on the highway links with medium or high sensitivity that are assumed would also be affected by workforce vehicles associated with the construction of the NGSS (A16 (Boston), A52 (Boston), A16 between the A52 and the A158 and the A158 between A16 and Horncastle, range between 1.1% and 8.5% (total traffic) and below the 10% threshold for the increase in total vehicles on sensitive highway links (Rule 2 of the EIA Guidelines) for formal assessment under EIA Regulations. Therefore, the addition of workforce vehicles associated with the construction of the NGSS (which would be between 0.1% and 0.2% based on the percentage increases associated with the construction of the Project OnSS alone) would not result in this threshold being breached.
263. The forecast percentage impacts of daily construction vehicle movements associated with the Project on the highway links with negligible or low sensitivity that are assumed would also be affected by workforce vehicles associated with the construction of the NGSS range between 0.8% and 11.7% (total traffic) and significantly below the 30% threshold for the increase in total vehicles or HGVs on highway links (Rule 1 of the EIMA Guidelines) for formal assessment under EIA Regulations. Therefore, the addition of workforce vehicles associated with the construction of the NGSS (which would be between 0.1% and 0.7% based on the percentage increases associated with the construction of the Project OnSS alone) would not result in this threshold being breached.
264. For the A16 and A52 in Boston (highway links 58 and 59) which have high sensitivity and are also assumed to be affected by other cumulative developments (included in Table 27.54), the forecast percentage impacts of daily construction vehicles is 2.5% and 3.7% (total traffic) and significantly below the 10% threshold for the increase in total vehicles on sensitive highway links (Rule 2 of the EIA Guidelines) for formal assessment under EIA Regulations. Therefore, the addition of workforce vehicles associated with the construction of the NGSS (which would be 0.1% and 0.2% based on the percentage increases associated with the construction of the Project OnSS alone) would not result in this threshold being breached.
265. For the other highway links with negligible or low sensitivity and are also assumed to be affected by other cumulative developments (included in Table 27.54), the forecast percentage impact of daily construction vehicles is between 2.2% and 14.6% (total traffic) and significantly below the 30% threshold for the increase in total vehicles or HGVs on highway links (Rule 1 of the EIMA Guidelines) for formal assessment under EIA Regulations. Therefore, the addition of workforce vehicles associated with the construction of the NGSS (which would be 0.1% based on the percentage increases associated with the construction of the Project OnSS alone) would not result in this threshold being breached.

27.9.2.5 Daily Cumulative Summary

The daily cumulative traffic flows are presented in Table 27.53 and the assessment of the cumulative impacts against the future baseline (2027) AADT is presented in Table 27.54.

Table 27.53 Cumulative Daily Traffic Flows

Location reference	Highway link	B/20/0488 and B/20/0489	N/084/0809/19	BAEF		Total		The Project		Cumulative traffic flow	
				Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs
1	B1449 Thurlby Road	n/a	190	n/a	n/a	190	n/a	195	174	385	174
2	B1449 Long Lane	n/a	190	n/a	n/a	190	n/a	195	174	385	174
3	A1104 (Alford)	n/a	190	n/a	n/a	190	n/a	195	174	385	174
4	A52 (west of Hogsthorpe)	n/a	190	n/a	n/a	190	n/a	195	174	385	174
5	A52 (south of Marsh Lane)	n/a	190	n/a	n/a	190	n/a	10	0	200	0
13	A52 (east of Croft)	182	95	n/a	n/a	277	n/a	147	72	424	72
14	A52 (Wainfleet)	182	95	n/a	n/a	277	n/a	198	87	475	87
15	A52 (Holland Lane)	182	95	n/a	n/a	277	n/a	87	111	364	111
16	A52 (Wrangle)	182	95	n/a	n/a	277	n/a	87	156	364	156
17	A52 (Butterwick)	182	95	n/a	n/a	277	n/a	87	156	364	156
18	A52 (west of AC3-1/AC-32)	182	95	n/a	n/a	277	n/a	574	434	851	434
19	A52 (east of AC3-1/AC-32)	182	95	n/a	n/a	277	n/a	575	434	852	434
42	A16 (south of Boston)	n/a	n/a	333	70	333	70	183	64	516	134
43	A16 (south of Boston)	n/a	n/a	126	70	126	70	420	305	546	375
48	A16 (south of A17)	n/a	n/a	126	70	126	70	489	350	615	420
49	A1121	n/a	n/a	132	n/a	132	n/a	124	116	256	116
53	A16 (north of A1104)	n/a	190	n/a	n/a	190	n/a	684	653	874	653
58	A16 (Boston)	182	95	201	70	478	70	508	241	986	311
59	A52 (Boston)	182	122	201	70	505	70	210	121	715	191

Table 27.54 Cumulative Impact Assessment (Daily Traffic)

Location reference	Highway link	2027 AADT		Cumulative traffic flow		Percentage impact (%)	
		Total traffic	HGVs	Total traffic	HGVs	Total traffic	HGVs
1	B1449 Thurlby Road	3,529	120	385	174	10.9%	145.0
2	B1449 Long Lane	2,635	91	385	174	14.6	191.2
3	A1104 (Alford)	7,464	246	385	174	5.2	70.7
4	A52 (west of Hogsthorpe)	4,151	90	385	174	9.3	193.3
5	A52 (south of Marsh Lane)	3,983	117	200	0	5.0	0.0
13	A52 (east of Croft)	8,359	177	424	72	5.1	40.7
14	A52 (Wainfleet)	8,359	177	475	87	5.7	49.2
15	A52 (Holland Lane)	5,035	199	364	111	7.2	55.8
16	A52 (Wrangle)	6,618	290	364	156	5.5	53.8
17	A52 (Butterwick)	9,051	537	364	156	4.0	29.1
18	A52 (west of AC3-1/AC-32)	12,096	440	851	434	7.0	98.6
19	A52 (east of AC3-1/AC-32)	12,096	440	852	434	7.0	98.6
42	A16 (south of Boston)	23,012	904	516	134	2.2	14.8
43	A16 (south of Boston)	23,012	904	546	375	2.4	41.5
48	A16 (south of A17)	16,942	1,711	615	420	3.6	24.5
49	A1121	9,125	639	256	116	2.8	18.2
53	A16 (north of A1104)	9,515	651	874	653	9.2	100.3
58	A16 (Boston)	39,495	2,211	986	311	2.5	14.1
59	A52 (Boston)	19,337	696	715	191	3.7	27.4

27.9.2.6 Further Assessment – Cumulative Daily Traffic Impacts

266. Based on the cumulative impact percentages in Table 27.54, the following links would require further assessment based on the percentage change in total daily traffic breaching the 10% magnitude of impact threshold, compared to that assessed for the Project alone:

- B1449 Thurlby Road; and
- B1449 Long Lane

27.9.2.7 Community Severance

267. For the B1449 Thurlby Road, the increase in total traffic resulting from the vehicle movements associated with the Project, and the committed residential development (N/084/0809/19) increases from 5.5% to 10.9%

268. For community severance on the B1449 Thurlby Rod, the magnitude of impact would be low and with medium sensitivity, the level of effect would be **minor adverse**, which is **not significant** in terms of the EIA Regulations.

269. For the B1449 Long Lane, the increase in total traffic resulting from the vehicle movements associated with the Project, and the committed residential development (N/084/0809/19) increases from 7.6% to 14.6%

270. For community severance on the B1449 Long Lane, the magnitude of impact would be low and with medium sensitivity, the level of effect would be **minor adverse**, which is **not significant** in terms of the EIA Regulations.

27.9.2.8 Vulnerable Road Users and Road Safety

271. There have been six PIAs on the B1449 Thurlby Road which were slight in severity and one PIA that was serious in severity.

272. Of the seven accidents, none were due to the deficiency of the road geometry and included causation factors such as losing control of the vehicle, a deer running into the road and a collision in darkness. One of the PIAs involved a HGV, which was slow moving and occurred due to a car overtaking and losing control.

273. There have only been two PIAs on the B1449 Long Lane, which were slight in severity and different causation factors, both related to driver distraction.

274. Given the existing road safety level of the B1449 is only marginally higher than the UK average (as identified in Paragraph 56) and the magnitude of impact can be considered low adverse.

275. With the implementation of measures within the final CTMP, including driver awareness, particularly in periods of darkness and warning signage for other road users, the magnitude of impact can be reduced to negligible adverse. As the B1449 has medium sensitivity, the resulting level of effect on vulnerable road users and road safety would be **minor adverse**, which is **not significant** in terms of the EIA Regulations

27.9.2.9 Pedestrian Amenity

276. The magnitude of impact would be negligible adverse, given the increase in total traffic or HGVs is less than 100% and with medium sensitivity, this would result in a **negligible adverse** level of effect, which is **not significant** in terms of EIA Regulations.

27.9.2.10 Dust and Dirt

277. As there would not be any cumulative increases in HGVs, no assessment has been undertaken for the potential effect of dust and dirt.

27.9.2.11 Cumulative Impacts Summary

278. Given the assessment set out in Paragraphs 226 to 277, it can be concluded that there would be no significant cumulative impacts in terms of traffic and transport.

27.10 Inter-Relationships

279. The inter-related effects assessment considers likely significant effects from multiple impacts and activities from the construction, operation and decommissioning of the Project on the same receptor, or group of receptors. Such inter-related effects include both:

- project lifetime effects: i.e. those arising throughout more than one phase of the project (construction, operation, and decommissioning) to interact to potentially create a more significant effect on a receptor than if just one phase were assessed in isolation; and
- receptor led effects: Assessment of the scope for all effects to interact, spatially and temporally, to create inter-related effects on a receptor (or group). Receptor-led effects might be short term, temporary or transient effects, or incorporate longer term effects.

280. No project lifetime Traffic and Transport effects would occur at a receptor, as there would be no construction traffic at the end of a phase of the Project, e.g. construction has been completed.

281. Receptor-led effects concern the accumulation of impacts on a single receptor between Traffic and Transport and other environmental disciplines. It is considered likely that during the construction phase, human receptors impacted by Traffic and Transport are also likely to be affected by traffic-borne noise and vibration effects and air quality, which are considered in Volume 1, Chapter 19 (document reference 6.1.19 and Volume 1, Chapter 26 (document reference 6.1.26), respectively, It is not anticipated that these inter-relationships will lead to any significant effects greater than the assessments presented for each discipline.

27.11 Transboundary Effects

282. There will be no transboundary effects arising from the Project with regard to Traffic and Transport.

27.12 Conclusions

283. This assessment has considered the potential traffic and transport effects arising from onshore activities associated with the Project. Consideration has been given to potential worst-case effects arising from onshore construction and decommissioning activities based upon available information. Worst-case parameters have been adopted to provide a robust assessment.
284. The approach undertaken was based upon The Planning Inspectorate's Scoping Opinion (Planning Inspectorate, September 2022), which was subsequently presented to and agreed through the ETG process.
285. A quantitative and qualitative assessment of the potential Traffic and Transport effects associated with worst-case construction activities has been undertaken following the methods set out in GEATM, DMRB and the use of professional judgement.
286. Peak hour vehicle movements associated with the construction of the Project have been considered for the impacts of driver severance and delay for all highway links within the study area. The outcome of the assessment identified no requirement to assess the potential effects, based on the forecast maximum number of vehicle movements in a peak hour.
287. The implications of temporary lane or road closures associated with the use of open trenching has been assessed in terms of driver severance and delay. The outcome of the assessment does not include any significant effects outside of the summer months. For Marsh Road, which provides access to Fosdyke Wash, where there would be no access to the car park used by leisure users for a short period, to ensure no significant effects, this would require the temporary closure to be outside of the summer months and require advance communication to the public of the temporary closure.
288. Based on a screening assessment using Rules 1 and 2 in GEART, 40 highway links required full assessment under EIA regulations, for the impacts of an increase in construction vehicle movements associated with the Project.
289. The outcome of the assessment identifies no significant effect as a result of:
- Community severance;
 - Vulnerable road users and Road Safety; and
 - Dust and dirt.
290. The consideration of WCH users of all PRoW within the study area that were identified as being directly impacted by the construction of the Project have been assessed, using the guidance in DMRB LA 112. The assessment has identified the following significant effects:
- Hogs/58/2, Burm/263/2, Crof/276/4, Crof/276/3 and Crof/276/2 (summer only), due to the length of temporary diversion; and
 - Fosd/2/1, Fosd/3/1 (any time of the year) and Surf/9/1 (summer only) due to the route being shared by construction traffic associated with the Project.

291. Given the additional walking distance for each of the temporary diversions is around 130m, which would be up to an additional three minutes (based on a typical walking speed of 1.4 metre per second) and since the diversions would be a short period only, no significant effects have been concluded.
292. For the PRow that would be shared with Project construction vehicles, the following further mitigation is proposed to result in no significant effect:
- Providing a marked (and segregate, where possible) walkway for users;
 - One-way HGV movements only; and
 - A banks person at each end of the section of the route affected to manage the inbound and outbound HGVs, and halting movements until there are no users (and also halting users if a vehicle is approaching).
293. The cumulative assessment has shown there would be no significant cumulative impacts in terms of Traffic and Transport.
294. A summary of the assessment outcomes is provided in Table 27.55 Table 27.55 Summary of the Assessment.

Table 27.55 Summary of the Assessment

Description of effect	Effect	Additional mitigation measures	Residual impact
Construction			
Driver delay and severance – increase in vehicle movements	No requirement for assessment	n/a	n/a
Driver delay and severance – use of open trenching	Minor (not significant) to Moderate (significant)	Measures within Outline CTMP (document reference 8.15) and road closures avoiding the summer months wherever practicable.	Minor adverse (not significant)
Community severance	Negligible to minor (not significant)	Measures within Outline CTMP (document reference 8.15) and the Outline TP (Document reference 8.16)	Negligible to minor adverse (not significant)
Vulnerable road users and road safety	Negligible to minor adverse (not significant)	Measures within Outline CTMP (document reference 8.15)	Negligible adverse (not significant)
Pedestrian amenity	Negligible adverse (not significant) to moderate adverse (significant)		Negligible to minor adverse (not significant)

Description of effect	Effect	Additional mitigation measures	Residual impact
Dust and dirt	Minor adverse (not significant) to major adverse (significant)		Minor adverse (not significant)
Users of PRoW	Negligible adverse (not significant) to Moderate adverse (significant)	Measures within Outline PAMP (document reference 8.17), shared route mitigation strategy.	Negligible to minor adverse (not significant)

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