FIVE ESTUARIES
OFFSHORE WIND FARM

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ENVIRONMENTAL STATEMENT

VOLUME 6, PART 3, CHAPTER 8: TRAFFIC AND TRANSPORT

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DEFINITION OF ACRONYMS

Acronym	Definition
AADT	Annual Average Daily Traffic
ADT	Average Daily Traffic
AIL	Abnormal Indivisible Load
ALAR	Abnormal Load Assessment Report
ATC	Automatic Traffic Count
CEA	Cumulative Environmental Assessment
CTMP	Construction Traffic Management Plan
DLUHC	Department for Levelling Up, Housing and Communities
DfT	Department for Transport
DMRB	Design Manual for Roads and Bridges
EEAS	East of England Ambulance Service
ECC	Export Cable Corridor
EIA	Environmental Impact Assessment
EACN Substation	East Anglia Connection Node Substation
ES	Environmental Statement
ESDAL	Electronic Service Delivery for Abnormal Loads
ETG	Expert Topic Group
GEART	Guidelines on the Environmental Assessment of Road Traffic
HDD	Horizontal Directional Drilling
HGV	Heavy Goods Vehicle
IEMA	Institute of Environmental Management and Assessment
LDP	Local Development Plan
LGV	Light Goods Vehicle
LRN	Local Road Network
LTP	Local Transport Plan
MDC	Maximum Design Scenario
NCN	National Cycle Network

Acronym	Definition
NEA	North Essex Authorities
NF OWF	North Fall Offshore Wind Farm
NH	National Highways
NPS	National Policy Statement
NRSWA	New Roads and Street Works Act
NSIP	Nationally Significant Infrastructure Projects
NTM	National Transport Model
OGV	Other Goods Vehicle
OnSS	Onshore Substation
PAMP	Public Access Management Plan
PEIR	Preliminary Environmental Information Report
PIA	Personal Injury Accident
PINS	The Planning Inspectorate
PRoW	Public Right of Way
SRN	Strategic Road Network
TCBGC	Tendring Colchester Borders Garden Community
TEMPRO	Trip End Model Presentation Program
TJB	Transition Joint Bay
TRO	Traffic Regulation Order
WCH	Walkers, Cyclists and Horse-riders
WTP	Workforce Travel Plan

GLOSSARY OF TERMS

Term	Definition
TCC	Temporary Construction Compounds (TCC) associated with onshore cable works.
Development Consent Order	An order made under the Planning Act 2008 granting development consent for a Nationally Significant Infrastructure Project (NSIP) from the Secretary of State (SoS) for the Department for Energy Security and Net Zero (DESNZ).
EIA	Environmental Impact Assessment (the process of evaluating the likely environmental impacts of a proposed project or development)
ES	Environmental Statement (the documents that collate the processes and results of the EIA).
Evidence Plan	A non-statutory, voluntary process to help agree the information to supply to the Planning Inspectorate (PINS) as part of a Development Consent Order (DCO) application.
Export Cable Corridor (ECC)	The area(s) where the export cables will be located. Refer to either the offshore or onshore ECC.
First principles	A method based on the quantities of materials required for the construction of VE and the corresponding number of heavy goods vehicles (HGVs) required and the number of expected construction workers.
Haul Roads	Temporary access roads used by construction traffic to access the construction work areas.
Institute of Environmental Management and Assessment (IEMA)	The Institute of Environmental Management and Assessment is the largest professional body for environmental practitioners in the United Kingdom and worldwide.

Term	Definition
Maximum Design Scenario (MDS)	The maximum design parameters of the combined project assets that 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.
National Highways	A governmental agency charged with operating, maintaining and improving motorways and major trunk roads in England.
Onshore ECC	The Onshore ECC is the working area for the onshore cable construction.
OnSS	Where the power supplied from the wind farm is adjusted (including voltage, power quality and power factor as required) to meet the UK System-Operator Transmission-Owner Code for supply to the National Grid substation.
PEIR	Preliminary Environmental Information Report. The PEIR was written in the style of a draft Environmental Statement (ES) and formed the basis of statutory consultation. Following that consultation, the PEIR documentation was updated into this final ES to accompany the application for the Development Consent Order (DCO).
Order Limits	The extent of development including all works, access routes, Temporary Construction Compounds (TCCs) and visibility splays.
Route section	A defined section of the Onshore ECC route
TRICS	A database of trip rates for developments used in the United Kingdom for transport planning purposes, specifically to quantify the trip generation of new developments
VE	The Project.

Term	Definition
	Refer to as Five Estuaries Offshore Wind Farm (VE) and refer to VE thereafter.
Wheelbase	The distance between the front and rear axles of a vehicle.
400kV connection	400 kV cable connection between the proposed VE substation and the Grid Connection Point

8 TRAFFIC AND TRANSPORT

8.1 INTRODUCTION

8.1.1 This chapter of the Environmental Statement (ES) considers the potential for the construction and operation of the onshore elements of the proposed Five Estuaries Offshore Wind Farm (VE) to impact upon Traffic and Transport. This chapter describes the scope, relevant legislation, assessment methodology, and the baseline conditions existing at the site and its surroundings. It considers any potential significant environmental effects the proposed development would have on this baseline environment; the mitigation measures required to prevent, reduce or offset any significant adverse effects; and the likely residual effects after these measures have been employed.

8.1.2 In particular it considers the construction, operational and decommissioning of onshore activities for VE.

8.1.3 The chapter is complemented with the following technical annexes:

- Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1;
- Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2;
- Volume 9, Report 24: Outline Construction Traffic Management Plan (Outline CTMP);
- Volume 9, Report 25: Outline Public Access Management Plan (Outline PAMP); and
- Volume 9, Report 26: Outline Workforce Travel Plan (Outline WTP).

8.1.4 This chapter has also been informed by the following ES chapter:

- Volume 6, Part 3, Chapter 1: Onshore Project Description.

8.2 STATUTORY AND POLICY CONTEXT

LEGISLATION

NEW ROADS AND STREET WORKS ACT (1991)

8.2.1 The New Roads and Street Works Act (NRSWA) (1991) sets out the statutory requirements for the placing of apparatus within the public highway.

HIGHWAYS ACT (1980)

8.2.2 The Highways Act (1980) sets out the requirements for general works within the public highway. A Highways Authority is given powers under this Act to recover expenses for repair of highways caused by the transport of excessive weights along the highway or caused by extraordinary traffic. Precautions must be taken doing works in or near highway in order to maintain public safety.

NATIONAL POLICY

NATIONAL POLICY STATEMENTS

8.2.3 The assessment of the potential Traffic and Transport impacts of the onshore elements of VE has been made with reference to the UK Government's National Policy Statements (NPSs). Key policies for Traffic and Transport are listed in Table 8.1. Further information on legislation and policies relevant to the EIA and their status is provided in Volume 1, Part 1, Chapter 2: Policy and Legislation.

8.2.4 NPSs set out policies or circumstances that the UK Government considers should be taken into account in decisions on Nationally Significant Infrastructure Projects (NSIPs).

8.2.5 In November 2023, the government published revised versions of the NPS documents in reflection to the March 2023 consultation on the draft statements. Since publication, the guidance was updated in January 2024 and in through this update it has come into effect. It is expected that the statements will be reviewed every five years, which will ensure that they reflect evolving policy and legislative changes.

8.2.6 The NPS relevant to the Project is Overarching NPS EN-1 (Onshore ECC, 2023a) only for Traffic and Transport.

NATIONAL PLANNING POLICY FRAMEWORK

8.2.7 The National Planning Policy Framework (NPPF) (Ministry of Housing, Communities and Local Government, updated December 2023) is the primary source of national planning guidance for non NSIPs in England. Whilst the NPPF is not directly applicable to NSIPs, as Government policy it may be considered relevant and important.

8.2.8 The NPPF contains the Government's strategies for economic, social and environmental planning policies in England and it is designed to be a single, tightly focused document.

8.2.9 Paragraph 115 of the NPPF states that:

"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."

8.2.10 Paragraph 117 of the NPPF states that:

"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."

CIRCULAR 01/22 UPDATE 'THE STRATEGIC ROAD NETWORK AND THE DELIVERY OF SUSTAINABLE DEVELOPMENT' (2022)

8.2.11 Circular 01/22 sets out how National Highways (NH) will engage with the development industry, public bodies and communities to assist the delivery of sustainable development.

8.2.12 In reference to environmental assessments, it states:

"The Company will engage in the relevant screening or scoping process where a potential impact on the SRN is identified. Environmental assessments must be comprehensive enough to establish the likely impacts on air quality, light pollution and noise arising from traffic generated by a development, along with the impacts from any proposed works to the SRN and identify measures to mitigate these impacts. Requirements and advice for undertaking environmental assessments in respect of transport impacts can be found in the DMRB"

LOCAL POLICY

8.2.13 EN-1 states that the Secretary of State (SoS) will also consider Development Plan Documents or other documents in the Local Development Framework to be relevant to their decision making.

ESSEX LOCAL TRANSPORT PLAN (2011)

8.2.14 The Essex Transport Strategy: The Local Transport Plan (LTP) for Essex, prepared by Essex County Council, was published in 2011 and is for 15 years. The LTP sets out our aspirations for improving travel in the county and has the following outcomes to achieve relevant to VE:

- *"Provide connectivity for Essex communities and international gateways to support sustainable economic growth and regeneration;*
- *Improve safety on the transport network and enhance and promote a safe travelling environment; and*
- *Secure and maintain all transport assets to an appropriate standard and ensure that the network is available for use."*

8.2.15 The LTP refers to congestion experienced on the A12A120 Trunk Roads, and the A133 at times of increased demand and substantial delays that can result should a major accident occur on or near them. Improvements to these routes have and are to be undertaken, as recommended in the LTP. Improvements on these routes include the A12 Junction 19 to 25 widening scheme (programmed for 2023/2034 to 2027/2078) and the safety improvements on the A120 at Harwich Road, Bentley Road and Little Bromley Road junctions, which have been undertaken.

8.2.16 Relevant transport priorities to VE for the Clacton-on-Sea area set out in the LTP include:

- *"Providing for and promoting access by sustainable modes of transport to development areas;*
- *Improving local cycle networks;*
- *Improving access to stations and facilities for rail passengers (particular for stations popular with commuters); and*
- *Promoting sustainable travel choices".*

ESSEX WALKING STRATEGY (2021)

8.2.17 The Essex Walking Strategy, prepared by Essex County Council, was published in 2021 and sets out the objectives relevant to re-establish walking as the first choice for everyday travel, wherever appropriate.

8.2.18 Of most relevance to VE is Objective 2: Improving road safety for pedestrians. The strategy states that the majority of pedestrians injured during the period 2013-2017 were crossing the road at a point not designated as a crossing, with 25% of these collisions taking place at T-junctions.

8.2.19 Three approaches to improving pedestrian safety are detailed in the strategy:

- The road user hierarchy;
- Footway maintenance; and
- Traffic speed.

TENDRING DISTRICT LOCAL PLAN 2013-2033 AND BEYOND

8.2.20 The Tendring District Local Plan (TDLP) was adopted in 2021 and the 'Section 1 Plan' was prepared jointly by Tendring District Council, Colchester Borough Council and Braintree District Council – the 'local planning authorities' (LPAs) collectively known as the 'North Essex Authorities' (NEAs) to form the first part of each of the authorities' respective Local Plans.

8.2.21 The 'Section 2 Plan' as adopted on the 25 January 2022 and a summary of the key policies relevant to the design of and the potential Traffic and Transport effects of VE is set out below:

"Policy CP 1 SUSTAINABLE TRANSPORT AND ACCESSIBILITY

Proposals for new development must be sustainable in terms of transport and accessibility and therefore should include and encourage opportunities for access to sustainable modes of transport, including walking, cycling and public transport.

Planning applications for new major development likely to have significant transport implications will normally require a Transport Statement. If the proposal is likely to have significant transport implications or a Transport Assessment, the scope of which should be agreed in advance between the District Council and the applicant, in consultation with Essex County Council as the Highway Authority; and

Policy CP 2 IMPROVING THE TRANSPORT NETWORK

Proposals for new development which contribute to the provision of a safe and efficient transport network that offers a range of sustainable transport choices will be supported. Major development proposals should include measures to prioritise cycle and pedestrian movements, including access to public transport.

Proposals will not be granted planning permission if there would be an unacceptable impact on highway safety, or the residual cumulative impact on the road network would be severe."

Table 8.1 Summary of policy context.

Policy	Key provisions	Section where comment addressed
NPS EN-1	Paragraph 5.14.5 states: *"If a project is likely to have significant transport implications, the applicant's ES should include a transport appraisal"*	This Traffic and Transport chapter and supporting annexes have been produced in accordance with current transport guidance and this is evidenced throughout.
NPS EN-1	Paragraph 5.14.6 states: "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."	VE is predicted to have an impact on the local highway network, which is maintained by Essex County Council and the Strategic Road network (SRN), which is maintained by National Highways (NH). ECC and NH have been consulted throughout the preparation of the DCO application for matters relating to Traffic and Transport.
NPS EN-1	Paragraph 5.14.7 states: *"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:* > reduce the need for parking associated with the proposal; > contribute to decarbonisation of the transport network; and > improve user travel options by offering genuine modal choice".	Table 8.19 outlines the Traffic and Transport mitigation measures for the construction phase of VE, such as Volume 9, Report 26: Outline WTP, which includes demand management measures to be adopted.

Policy	Key provisions	Section where comment addressed
NPS EN-1	Paragraph 5.14.8 states: "The assessment should also consider any possible disruption to services and infrastructure (such as road, rail and airports)."	Section 8.10 sets out the assessment of the likely effects on the roads within the study area as a result of the construction phase of VE. Table 8.2 sets out how the assessment of disruption to the railway has been scoped out.
NPS EN-1	Paragraph 5.14.11 states: *"Where mitigation is needed, possible demand management measures must be considered. This could include identifying opportunities to:* > *reduce the need to travel by consolidating trips;* > *locate development in areas already accessible by active travel and public transport;* > *provide opportunities for shared mobility;* > *re-mode by shifting travel to a sustainable mode that is more beneficial to the network;* > *retime travel outside of the known peak times; and* > *reroute to use parts of the network that are less busy."*	Table 8.19 outlines the Traffic and Transport mitigation measures for the construction phase of VE, such as Volume 9, Report 26: Outline WTP, which includes demand management measures to be adopted.
NPS EN-1	Paragraph 5.14.21 states: *"The Secretary of State should only consider refusing development on highways grounds if there would be an unacceptable impact on highway safety, or 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."*	The assessment of road safety in relation to the additional traffic associated with the construction phase of VE is set out in Paragraph 8.10.4. 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 Volume 9, Report 24:

Policy	Key provisions	Section where comment addressed
		Outline CTMP and therefore considered to be an acceptable impact. The cumulative impact assessment is provided in Section 8.12.
NPS EN-1	Paragraph 5.14.14 states: "*The Secretary of State may attach requirements to a consent where there is likely to be substantial HGV traffic that:* • *control numbers of HGV movements to and from the site in a specified period during its construction and possibly on the routing of such movements;* • *make sufficient provision for HGV parking, and associated high quality 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* • *ensure satisfactory arrangements for reasonably foreseeable abnormal disruption, in consultation with network providers and the responsible police force."*	The assessment of the increases in heavy goods vehicles (HGVs) associated with the construction phase of the Project is set out in Section 8.10. Any impacts of increases in HGVs are further reduced by the types of traffic management measures that would be implemented as set out in Volume 6, Report 24: Outline CTMP and mitigation that is proposed (Appendix X, Y Z and AA of Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2) and therefore considered to be an acceptable impact. Volume 6, Report 24: Outline CTMP states that no parking will be permitted on public roads and states that the appropriate authorities and emergency services will be consulted regarding HGV movements during the construction of VE.
NPS EN-1	Paragraph 5.14.16 states: *"Applicants should consider the DfT policy guidance "Water Preferred Policy Guidelines for the movement- of- abnormal-indivisible loads" when preparing their application"*	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.

Policy	Key provisions	Section where comment addressed
		It is anticipated that the port would be Harwich; however, this would be confirmed post DCO consent. Swept path checks of the anticipated delivery vehicle and AIL have been undertaken between Harwich and the Substation Zone (see (Appendix EE of Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2), with an improvement scheme proposed to facilitate the movements at the A120/Bentley Road junction (see Appendix Y of Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2).
NPS EN-1	Paragraph 5.14.21 states: *"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."*	The Personal Injury Accident (PIA) analysis is set out in Paragraphs 8.7.35 to 8.7.39 of this chapter. 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 Volume 6, Report 24: Outline CTMP and therefore considered to be an acceptable impact. The cumulative impact assessment is set out in Section 8.12.
TDLP	Policy CP1 states: *"Proposals for new development must be sustainable in terms of transport and accessibility and therefore should include and encourage opportunities for access to*	Table 8.19 outlines the Traffic and Transport mitigation measures for the construction phase of VE, such as Volume 9, Report 26: Outline WTP, which will include demand management measures to be adopted.

Policy	Key provisions	Section where comment addressed
	sustainable modes of transport, including walking, cycling and public transport."	
TDLP	Policy CP1 states: *"Planning applications for new major development likely to have significant transport implications will normally require a Transport Statement. If the proposal is likely to have significant transport implications or a Transport Assessment, the scope of which should be agreed in advance between the District Council and the applicant, in consultation with Essex County Council as the Highway Authority"*	The scope of Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2, which has been discussed with Essex County Council and NH during the Evidence Plan process.
TDLP	Policy CP2 states: *"Proposals for new development which contribute to the provision of a safe and efficient transport network that offers a range of sustainable transport choices will be supported. Major development proposals should include measures to prioritise cycle and pedestrian movements, including access to public transport."*	Table 8.19 outlines the Traffic and Transport mitigation measures for the construction phase of VE, such as Volume 9, Report 26: Outline WTP, which will include demand management measures to be adopted.
TDLP	Proposals will not be granted planning permission if there would be an unacceptable impact on highway safety, or the residual cumulative impact on the road network would be severe.	The assessment of road safety in relation to the additional traffic associated with the construction phase of VE is set out in Paragraph 8.10.40 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 Volume 9, Document 24: Outline CTMP) and therefore, considered to be an acceptable impact. The cumulative impact assessment is set out in Section 8.12.

8.3 CONSULTATION

8.3.1 To date, consultation with regards the scope of the Traffic and Transport assessment has been outlined within the Scoping Report (RWE, October 2021) and via the VE Evidence Plan (Traffic and Transport Expert Topic Group (ETG) process.

8.3.2 Table 8.2 provides a summary of consultation comments received to date relating to Traffic and Transport, and associated responses.

8.3.3 A Scoping Opinion for VE was sought from the Planning Inspectorate (PINS), which included responses to the proposed assessment methodology for further consideration.

8.3.4 In addition, Essex County Council and NH were consulted over the general approach to the assessment and mitigation proposals. The consultation, through ETG meetings and other meetings took place between July 2022 and January 2024.

8.3.5 Table 8 provides a summary of consultation comments received to date relating to Traffic and Transport and associated responses.

Table 8.2 - Summary of consultation relating to Traffic and Transport

Date and consultation phase/type	Consultation and key issues raised	Section where comment addressed
PINS Scoping Opinion November 2021	Disruption to railway network and users during construction. *"The Scoping Report states that operation of rail services on the Sunshine Coastline, including stations within the area of search, should not be affected by construction of the Proposed Development. However, no information is presented as to the potential number and location of crossings of the railway track and the feasibility of the preferred HDD method is not yet known. In the absence of this information, the Inspectorate is not in a position to agree to scope this matter out of further assessment. Accordingly, the ES should include an assessment of these matters or evidence demonstrating agreement with the relevant consultation bodies and the absence of LSE on the environment."*	Discussions with Network Rail are underway, with a view to agreeing a Basic Asset Protection Agreement for an undertrack crossing point.
PINS Scoping Opinion November 2021	Any Traffic and Transportation impacts during operation. *"On the basis that there would be no permanent employees during operation of the onshore components (e.g. underground cables and substation) and these components would require infrequent maintenance visits (circa once per week), resulting in a negligible number of additional vehicles on the highway network compared to the baseline position as described in Table 22.4 of the Scoping Report, the Inspectorate agrees that significant effects from operational road traffic associated with onshore components are unlikely to occur and assessment of this matter can be scoped out of the ES. However, the ES should clarify the anticipated number and routeing of road vehicle movements during the operational phase."*	An indication of operational and maintenance vehicle movements for VE is provided in Paragraphs 8.4.47 and 8.4.48.
PINS Scoping Opinion November 2021	Study area *"The Inspectorate notes that the onshore AoS has been broadly defined and will be further refined as more information becomes available about the Proposed Development. The baseline data gathering and assessments in the ES should be based on a study area which captures the full range of effects on both the strategic and local road networks, including any affected junctions. It should be agreed with relevant stakeholders wherever possible. VE's attention is drawn to the comments from NH and SCC in Appendix 2 of this report."* The relevant SCC comment is: *"SCC would have expected that the A137 through Manningtree to have been included specifically the rail crossing and underbridge which is known to be under pressure in terms of capacity and delay."*	The study area has been discussed further with Essex County Council and NH and presented in a Traffic Data Locations Technical Note (May 2022), which was issued to Essex County Council and NH. The data are set out in Paragraphs 638.7.17 to 8.7.19 and Table 8.10. The consideration of traffic flows at the A12 Junction 29 and the A120 between the Horsley Cross roundabout and Harwich has been included following feedback from NH at the ETG (November 2022). Data were obtained for this additional section of the A120 using existing data, as set out in Paragraphs 638.7.17 to 8.7.19 and Table 8.10. Additional highway links have also included on the local highway network associated with the revised construction workforce vehicle distribution discussed and agreed with Essex County Council. Data were obtained for these additional highway links using existing data, as set out in Paragraphs 8.7.17 to 8.7.19 and Table 8.10. The A137 through Manningtree has not been included in the study area as it not part of the proposed VE construction access route network for HGVs and is not likely to be used by many construction workers, given the limited accommodation options along the A137 corridor between Ipswich and Tendring. Construction workers arriving and departing to Ipswich would use the A12 and A120, which is a similar or shorter journey time to the majority of the VE construction access locations, particularly when there is known sectdelays on the A137 route.
PINS Scoping Opinion November 2021	Data sources *"NH has advised of additional data sources which should also be used as part of the baseline data in the ES (see Appendix 2 of this report)."*	A combination of DfT traffic data and traffic data from NH's Webtris database as set out in Table 8.10 have been used to inform the assessment in this ES and Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2.
PINS Scoping Opinion November 2021	Transport modes	No alternative modes of transport to road are likely to be used for the delivery of plant or materials during the construction phase of VE.

Date and consultation phase/type	Consultation and key issues raised	Section where comment addressed
	"The Inspectorate notes that there is limited information in the Scoping Report about any potential use of alternative modes of transport to road, e.g., rail and boat, and their likely impacts. Where use of alternative transport modes is proposed, the ES should include information about the expected split of transport modes and the frequency, location and type of movements associated with each mode. The worst-case scenario for Traffic and Transport impacts should be established in the ES and the assessment of significant effects should be undertaken on that basis."	Whilst there may be some construction personnel movements via walking, cycling and rail (as part of a multi modal journey), for a robust assessment, all movements have been assumed to be by road as set out in Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2.
PINS Scoping Opinion November 2021	Traffic surveys *"The Scoping Report states that these (traffic surveys) would be undertaken in August 2022 with several samples in a neutral month. The traffic surveys should include a full set of surveys for the neutral month rather than being restricted to several samples. VE's attention is drawn to the comments from NH on this point (see Appendix 2 of this report).*	A full set of surveys has been undertaken in August and September as per the requirements, as set out in Volume 6, Part 6, Annex 8.1: Transport Assessment, Volume 6, Part 6 – Part 1, Annex 8.2: Transport Assessment – Part 2 and Paragraph 8.15.2 of this chapter.
PINS Scoping Opinion November 2021	Assessment methodology *"The Scoping Report states that the assessment will be undertaken with reference to the Guidance for Environmental Assessment of Road Traffic (GEART). No reference is made within the Scoping Report about potential effects to driver amenity; from fear and intimidation to pedestrians; and to sensitive receptors from vibration caused by heavy goods vehicles (HGV), which are identified in GEART. The ES should include an assessment of these matters where significant effects are likely or otherwise explain why significant effects are not expected. The Inspectorate also notes that NH and SCC have identified additional sources of guidance which should be used in the assessments (see Appendix 2 of this report). The methodology should be agreed with relevant stakeholders and supported by evidence of agreement wherever possible."*	Driver amenity is not scoped into the assessment as it not specifically referred to in GEART (or the Guidance for the Environmental Assessment of Traffic and Movement (GEATM), which replaced GEART in July 2023). The pleasantness of a journey for a driver of a vehicle is not considered a necessary potential effect to consider in the Traffic and Transport chapter for VE. Fear and intimidation to pedestrians was not scoped into the assessment; however this has been undertaken as set out in paragraphs 8.10.48 to 8.10.53. The assessment of vibration from HGVs is scoped out of the assessment in Chapter 9: Noise and Vibration.
PINS Scoping Opinion November 2021	Driver severance and delay *"The Scoping Report states that the worst-case scenario used in the assessment will comprise the peak period of anticipated movements for each construction site, using an indicative construction programme. The ES should explain what assumptions have been made about the construction programme used to inform assessment and how it represents the worst-case scenario for the purposes of identifying significant effects."*	This is explained in Volume 6, Part 6, Annex 8.1: Transport Assessment -Part 1, Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2 and Section 8.8 of this chapter.
PINS Scoping Opinion November 2021	Collision risk data *"The assessments should use the collision risk data for the previous five years rather than three years as stated in the Scoping Report. VE's attention is drawn to the comments from NH and ECC in Appendix 2 of this report on this point."*	The assessment is based on a minimum of five years excluding the Covid-19 pandemic as set out in Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1, Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2 and Paragraphs 8.7.29 and 8.7.35 of this chapter.
PINS Scoping Opinion November 2021	Abnormal indivisible loads (AIL) *"The Scoping Report states that a qualitative assessment of Abnormal Indivisible Loads (AIL) is proposed in the ES. This assessment should consider the worst-case number of AIL and types of vehicles that will be required. If mitigation is required, it should be clear how this will be secured in the DCO. VE's should also consider whether use of existing river and rail connections for the transport of AIL could represent an environmentally better outcome than road transport."*	AIL routeing investigations have been undertaken and a summary is provided in Section 8.0 of Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2.

Date and consultation phase/type	Consultation and key issues raised	Section where comment addressed
PINS Scoping Opinion November 2021	Hazardous and dangerous loads *"Impact 22.4 in the Scoping Report is titled 'Hazardous and dangerous loads' but the accompanying text describes AIL only. It is unclear from the Scoping Report whether there is also potential for hazardous loads to be required as part of the construction, operation or decommissioning of the Proposed Development. This should be clarified within the ES, and where there is potential for hazardous loads that could give rise to significant effects, an assessment should be undertaken and presented in the ES accordingly."*	There would be no hazardous loads associated with the construction of VE.
PINS Scoping Opinion November 2021	Users of Public Rights of Way (PRoW) *"The ES should confirm whether any permanent diversions or closures of PRoW would be required during the operational phase. The ES should include an assessment of the impact of any permanent diversions and closures on users of PRoW including walkers, cyclists and equestrians, where significant effects are likely to occur."*	No permanent diversions or closures of PRoW would be required. Volume 9, Report 25: Outline PAMP sets out the potential temporary diversions that might be required during construction of VE and an assessment of this is set out in Table 8.36 to Table 8.46 of this chapter.
PINS Scoping Opinion November 2021 Appendix 2 (NH)	*"Collision analysis data should be obtained for each Strategic Road Network (SRN) junction within the Traffic and Transport Study Area. This should cover a recent five-year period, excluding any time periods where traffic flows may have been affected by Covid-19 pandemic."*	The Personal Injury Accident (PIA) analysis is set out in Paragraphs 8.7.35 to 8.7.39 of this chapter for a five year period including the years affected by the Covid-19 pandemic, as discussed and agreed at the ETG on 5 September 2023.
PINS Scoping Opinion November 2021 Appendix 2 (NH)	*"Full traffic surveys should be undertaken in a neutral month as well as August 2022 in order to better understand the baseline conditions and they should be utilised in any assessments. To ensure that the data collected represents a reliable picture of post-Covid traffic flows, the data should be collected in accordance with the National Highways document 'CAD Guidance on traffic data collection from September 2021' dated 30th July 2021."*	Traffic surveys have been collected in August 2022 and a neutral month, and in accordance with National Highways document 'CAD Guidance on traffic data collection from September 2021' dated 30th July 2021, as set out in Section 2.12 of Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2
PINS Scoping Opinion November 2021 Appendix 2 (NH)	*"Traffic surveys should be undertaken at any SRN junction within (or outside) the TTSA that may have a material number of new trips generated by the development construction traffic."*	Traffic surveys have been undertaken at the A120/Harwich Road, A120/Bentley Road and A120/B1035 junctions, as set out in Section 2.1.2 of Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2.
PINS Scoping Opinion November 2021 Appendix 2 (NH)	*"The expected construction routeing, including the abnormal load routeing, to each site should be established in order to determine the impact of construction traffic on the SRN. The identified port location, for example, could require the scope of the TTSA to widen."*	The expected construction vehicle routeing has been discussed and agreed with NH and Essex County Council and includes a sensitivity test of 100% of HGVs arriving from and departing to the A120 to the east of the B1035 Horsley Cross roundabout as set out in Paragraphs 8.8.3 to 8.8.7. Whilst the route of the abnormal loads has not been identified at this stage, this may be from the A120 between Harwich at the proposed Onshore Substation (OnSS).
PINS Scoping Opinion November 2021 Appendix 2 (NH)	*"The routeing on the SRN of construction traffic to the onshore substation location should be established, including the number of trips at each junction."*	The forecast VE vehicle movements that would use the A12 and A120 to and from the OnSS is set out in Volume 6, Part 6, Annex 8.1: Transport Assessment, Volume 6, Part 6 – Part 1, Annex 8.2: Transport Assessment – Part 2 and also see Table 8.18 of this chapter.
PINS Scoping Opinion November 2021 Appendix 2 (NH)	*"The routeing on the SRN of construction traffic to the onshore export cables should be established, including the number of trips at each junction."*	The forecast VE vehicle movements that would use the A12 and A120 to and from the OnSS is set out in Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1, Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2 and also see Table 8.18 of this chapter.
PINS Scoping Opinion November 2021 Appendix 2 (NH)	*"Upon establishing the location of the port, all trips associated with the construction and post-construction periods that would use any of the SRN junction should be identified. If this is not possible before DCO consent, then the number of trips using each SRN junction in the study area for each of the potential port options should be identified to inform National Highways of potential impacts."*	The preferred base port(s) for the offshore construction and operation and maintenance activities of VE is not known as this would be decided post-consent. Port activity would be within the envelope assessed when the existing approvals for the Port were considered

Date and consultation phase/type	Consultation and key issues raised	Section where comment addressed
		Therefore, an assessment of these vehicle movements does not form part of this chapter.
PINS Scoping Opinion November 2021 Appendix 2 (NH)	*"SRN junctions which form part of the access to construction sites should be assessed whether the traffic flow impacts exceed the GEART thresholds referred to or not."*	A threshold of 30 two-way vehicle movements associated with VE and applying professional judgement has been used for the consideration of the assessment of junctions on the SRN, as set out in Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1, Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2and in Paragraphs 8.10.8 and 8.10.9 of this chapter.
PINS Scoping Opinion November 2021 Appendix 2 (NH)	*"The trip distribution and assignment for the trip generation of the proposals should be calculated to establish the impact that the proposals will have on the SRN."*	Full details of the calculation of the trip generation and distribution for VE construction traffic forecasts is set out in Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1, Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2 and associated appendices.
PINS Scoping Opinion November 2021 Appendix 2 (NH)	*"Junction capacity assessments should be undertaken using industry standard software such as Junctions9 or LinSig so as to examine in more detail the performance of the junction under the traffic flows predicted."*	No junctions on the SRN have been assessed in this chapter as set out in Paragraph 213 in Volume 6, Part 6, Annex 8.1: Transport Assessment: Transport Assessment – Part 1 Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2 and in Paragraphs 8.10.8 and 8.10.9 of this chapter.
PINS Scoping Opinion November 2021 Appendix 2 (NH)	*"The expected start and end year of the construction phase of the wind farm should be confirmed and used to define an assessment year for use in the Transport Assessment."*	A construction start date of 2027 has been assumed for the assessments.
PINS Scoping Opinion November 2021 Appendix 2 (Essex County Council)	*"A five-year period is required for collision data."*	The Personal Injury Accident (PIA) analysis is set out in Paragraphs 8.7.35 to 8.7.39 for an eight-year period including five years before the years affected by the Covid-19 pandemic (2015 to 2019) and one year after (2022) as agreed at the Traffic and Transport ETG on the 5 September 2023
PINS Scoping Opinion November 2021 Appendix 2 (Essex County Council)	*"The data sources identified are appropriate, as a general rule data should be no more than 3 years old and any data falling with the Covid pandemic period from March 2020 to mid-September 2021 would not be representative."*	Traffic surveys have been collected in August 2022 and a neutral month and are outside of the months affected by the Covid-19 pandemic.
Briefing Note 02 Rev A March 2022 NH Response Traffic and Transport: Data Collection Requirements Technical Note	*"With regards to any surveys that need to be undertaken during the summer months, the peak hours (across 24 hours) in August on the SRN should be established and the summer surveys should be undertaken during these peaks. Due to the nature of the summer trips, this should be across seven days (weekends and weekdays)."*	The traffic surveys undertaken on the A120 in August 2022 were for a period of seven days, as set out in Paragraph 18 of Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2.
Briefing Note 02 Rev A March 2022 NH Response Traffic and Transport: Data Collection Requirements Technical Note	*"Any additional traffic surveys required to be undertaken on the SRN in September or October should be undertaken outside of school holidays.* *Any traffic surveys undertaken on the SRN should be undertaken on a neutral day (i.e. a Tuesday, Wednesday, and/or Thursday)."*	The neutral month traffic surveys on the SRN were undertaken outside of the school holidays and on a neutral day (Tuesday) as set out in Table 2.3 of Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2.
Briefing Note 02 Rev A March 2022	*"The collision data collected should acknowledge the new roundabout at the Harwich Road Great Bromley/Little Bentley junction and the conversion of nearby priority junctions to left-in, left-out operation. AECOM understand that this happened during August 2019."*	The analysis of PIAs takes into account the changes to the junctions on the A120 in 2019, Paragraph.8.7.42.

Date and consultation phase/type	Consultation and key issues raised	Section where comment addressed
NH Response Traffic and Transport: Data Collection Requirements Technical Note		
East of England Ambulance Service (EEAS) August 2022	*"Key areas to address through project assessment, mitigation and management measures are summarised below;* *Traffic & transport including AIL & HGV movements-minimise potential highway network delay & route/road diversions & closures."*	This chapter provides an assessment of VE construction HGVs, including the potential effects of delay, as set out in Paragraphs 8.10.4 to 8.10.14 of this chapter.
Essex County Council Section 42 May 2023	*"Further details of all access point and road crossings will be required with the submission of the DCO including stage 1 road safety audit."*	General Arrangement (GA) drawings of the proposed access points and haul road crossings that would be used by VE have been prepared and have been subject of a Stage 1 Road Safety Audit (RSA) as set out in Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2.
Essex County Council Section 42 May 2023	*"It is not clear which version of TEMPRO has been used. Essex County Council have issues with the use of TEMPRO 8 on the Essex Road network as experience is that it underestimates growth."*	TEMPRO version 7.2c has been used as set out in Paragraph 8.7.21.
Essex County Council Section 42 May 2023	*"Committed development planning application numbers are set out, but it would be useful to show these on a plan and provide a description of the development. It is unclear if Tendring District Council have been involved in identification of committed developments."*	Committed developments are shown in Figure 4.6 of Volume 6, Part 1, Annex 3.1: Cumulative Effects Assessment Methodology.
Essex County Council Section 42 May 2023	*"The core working hours are 12 hours and the peaks fall outside of the network peak, is this realistic, particularly in winter months? "*	A proportion of vehicle movements associated with the construction of VE would be most likely to be within highway peak hours during the winter months, as per the analysis of first and last daylight across the year in Tendring has been undertaken as set out in Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2. Traffic flows are generally higher during August across the highway network in the study area, when peak hour vehicle movements associated with the construction of VE are less likely due to the availability of daylight hours as set out in Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2. Therefore, should there be some vehicle movements associated with the construction of VE during the peak hours in the winter months, the total vehicle movements are likely to be lower than the total during August as set out in Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2.
Essex County Council Section 42 May 2023	*"Table 8.2.1 and Figure 8.14 etc. are these for AM or PM peaks?"*	The peak hour flows are assumed to be the same in each.
Essex County Council Section 42 May 2023	*"The Highway Authority have not been able to undertake site visits of all roads that are proposed to access the works compounds and there are specific concerns regarding use of some minor routes including Waterhouse Lane to the north of the A120.* *It is likely that if it is not possible to avoid use of the minor/rural road network by utilising internal haul roads then further mitigation should be investigated on roads where two HGVs cannot pass each by possible road widening or provision of passing bays."*	Waterhouse Lane is no longer proposed as a construction access route for HGVs; however, is included as a potential route for construction workforce vehicles to access the OnSS at the access on Ardleigh Road. Improvements to Bentley Road are proposed, as set out in Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2. No other routes have been identified for any passing bays or widening as a result of the VE construction traffic.

Date and consultation phase/type	Consultation and key issues raised	Section where comment addressed
NH Section 42 May 2023	*"Clarification should be provided regarding whether the section of the A120 to the east of the Horsley Cross roundabout has been included in the highway study area, and if not, justification should be provided for excluding this section of the SRN from the study area."*	A sensitivity test has been undertaken with 100% of HGV movements arriving from the section of the A120 to the east of the Horsley Cross roundabout, as presented in Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2 and as assessed in Section 8.10 of this chapter. The assignment of workforce vehicle movements based on the trip distribution agreed with Essex County Council and NH includes vehicle movements on the A120 to the east of Horsley Cross roundabout as presented in Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2 and as assessed in 8.10 of this chapter.
NH Section 42 May 2023	*"The section of the A120 from the B1035 junction to Harwich should either be included as a construction access route, or justification for the exclusion of the route should be provided."*	
NH Section 42 May 2023	*"The full section of the A120 from A12 Junction 29 to the junction giving access to Harwich International Port, including the proposed new A120 junction associated with the Tendring Colchester Borders Garden Community, as well as all other existing junctions on this stretch of the A120, should be included in the transport study area."*	The study area for Traffic and Transport extends to the A12 Junction 29 only as forecast traffic associated with the construction of VE would be imperceptible in the daily fluctuations in traffic on the A12 to the south or north of this junction.
NH Section 42 May 2023	*"Data should be collected (either existing or new) for the section of the A120 to the east of the junction with the B1035 to Harwich in order for the baseline conditions of this section of the network to be understood."*	Data for the section of the A12 between the B1035 Horsley Cross roundabout to Harwich has been collected from the NH Webtris database as presented in Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2.
NH Section 42 May 2023	*"Justification for excluding the assessment of the traffic impact from the construction period of the offshore elements of the development should be provided, or the traffic impact of the construction of the offshore elements of the development should also be assessed."*	The preferred base port(s) for the offshore construction and operation and maintenance activities of VE is not known as this would be decided post-consent. Port activity would be within the envelope assessed when the existing approvals for the Port were considered. Therefore, an assessment of these vehicle movements does not form part of this chapter.
NH Section 42 May 2023	*"Drawings of the proposed construction access to TCC 8 (i.e. Access 12) should be provided to National Highways for review to determine whether the junction's proximity to the A120 will impact the SRN"*	General Arrangement (GA) drawings of the proposed access points and haul road crossings that would be used by VE and NFOWF have been prepared and have been subject of a Stage 1 Road Safety Audit (RSA) as set out in Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2. It was agreed by NH at an ETG on 5 September 2023 that there would be no issues of blocking back to the A120 with the proposed access on the B1035.
NH Section 42 May 2023	*"The TEMPro growth factors should be provided for both the AM and PM peak periods. Further clarification regarding the parameters used to obtain the growth factors should be provided, such as the geography and the road type."*	Details of the TEMPRO factors are provided in Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2. AM and PM peak period TEMPRO factors are not provided as no junction capacity assessments have been undertaken during the peak periods.
NH Section 42 May 2023	*"The consented container terminal development at Bathside Bay should be included as a committed development in the study, or justification for excluding it should be provided"*	This has been included in the cumulative assessment presented in Section 8.12.
NH Section 42 May 2023	*"Greater consideration should be given to the methodology of the construction workforce trip distribution and assignment, or justification should be provided to support the assumptions applied to the trip distribution and assignment methodology"*	The workforce trip distribution has been discussed and agreed with Essex County Council. NH stated at the ETG meeting on 5 September 2023, stated it would defer to Essex County Council in the workforce distribution and therefore this has been agreed with both stakeholders.
NH Section 42 May 2023	*"The maximum peak hour trip generation for the SRN should be provided for both the AM and PM peak"*	It is assumed the peak hour vehicle movements would be the same in the AM and PM peaks (HGVs spread evenly throughout the day and a worst case of 20% workforce

Date and consultation phase/type	Consultation and key issues raised	Section where comment addressed
		vehicles) as set out in Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2.
NH Section 42 May 2023	*"Turning movements for each SRN junction in the study area should be provided in order to determine where junction capacity assessments are required on the SRN, unless further justification is provided for not doing so. For example, details of individual turning movements at the junctions concerned"*	The worst-case peak hour vehicle movements for the construction of VE where they are greater than 30 two-way movements are presented in Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2 with a justification for not undertaking junction capacity assessments.
NH Section 42 May 2023	*"Further clarification should be provided regarding the reasoning for only including 18 months of the construction programme in the highway assessment, when the construction period is stated to be 36 months."*	The assessment presented in Section 8.10 is based on the worst-case month during the construction period (24 months), which assumed the construction of the OnSS would start in month 7 and the construction of the Onshore ECC finalised in month 18.
NH Section 42 May 2023	*"Confirmation should be provided as to the suitability of A120 /Bentley Road and A120 /Harwich Road junctions to accommodate the physical swept paths of the types of vehicles envisaged, without over-running kerb lines and/or adjacent traffic lanes"*	Swept path analysis drawings of the junctions that would be used by HGVs associated with the construction of VE are provided in Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2, including for the AILs.
NH Section 42 May 2023	*"The collision analysis study period should be clarified."*	The collision analysis has been confirmed and agreed with NH at the ETG on 5 September 2023 as 2015 to 2022, as presented in Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2 and in Paragraphs 8.10.39 of this chapter.
NH Section 42 May 2023	*"The study area for the collision analysis should be extended to include the section of the A120 from the B1035 junction to Harwich."*	The section of the A120 between the B1035 Horsley Cross roundabout and Harwich has been included in the collision analysis as presented in Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2.
NH Section 42 May 2023	*"The Abnormal Load Assessment Report should be provided to National Highways when it has been finalised"*	An abnormal load assessment would be prepared should the DCO be approved Swept path analysis drawings of the AIL manoeuvre at the A120/Bentley Road junction is provided in Appendix EE of Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2.
NH Section 42 May 2023	*"Consideration should be given to the possibility of a dedicated minibus service for workforce from towns in the vicinity of the proposed construction locations to reduce the level of workforce car trips generated."*	It was discussed and agreed at the ETG on 5 September 2023 that the target car occupancy of 1.5 could be achieved through a range of measures and a commitment to a dedicated minibus service would not be appropriate.
Tendring District Council (TDC) Section 42 May 2023	*TDC requests further monitoring and assessment of construction traffic impacts at popular landfall tourism sites*	The B1032 Clacton Road is the closest highway link to landfall subject to the formal assessment in this chapter and results in no significant effects. A negligible number of HGVs (maximum of 2 per month) and employees (maximum of 80 in a month) would require access to the Beach via the Holland Haven Country Park access from the B1032 Clacton Road. Given the very low anticipated VE construction vehicle movements at this tourist site, they do not require formal assessment; however, the sensitivities of tourism are acknowledged in Volume 9, Report 24: Outline CTMP.
Essex County Fire and Rescue Section 42 May 2023	*"Implement a transport strategy to minimise the impact of construction and prevent an increase in the number of road traffic collisions. Any development should not negatively impact on the Service's ability to respond to an incident in the local area."*	Volume 9, Report 24: Outline CTMP sets out the measures and processes that would be implemented on construction access routes, at construction accesses and haul road crossings, to minimise disruption on the highway network and maintain safety for all users.
Little Bromley Parish Council Section 42 May 2023	*"Little Bromley Parish Council has concerns around Construction Traffic - The predicted HGV traffic during the construction period is exceptionally high with greater than 6x volume growth from today, for example, on Bentley Road (from 28 per day to 181 per day). With a 12-hour work day this would indicate an average of 15 HGV movements per hour, or one every 4 minutes. We would expect that in reality there will be periods*	The vehicle movements assessed in this chapter are the maximum anticipated per day during the construction of VE, based on a set of robust assumptions. The average VE construction vehicle movements during the 18/19-month construction period are also set out in Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2.

Date and consultation phase/type	Consultation and key issues raised	Section where comment addressed
	where volumes are even higher with less traffic at other times. The roads in the parish of Little Bromley are not designed for such traffic volumes and size. It is not possible for two HGV's to pass on most roads without one of the vehicles mounting the road verge, with subsequent verge damage. The roads themselves are in poor repair, and with this volume of HGV's will deteriorate further and faster. LBPC would like to understand how Five Estuaries will mitigate these highway problems."	The percentage increases, of HGVs in particular are due to the very low baseline on Bentley Road. No HGVs associated with the construction of HGVs would be permitted to travel through Little Bromley and will access the Onshore ECC via Bentley Road to the south of the Onshore ECC and the A120 only. Highway improvement works are proposed (Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2) to facilitate safe two-way HGV movements for the section of Bentley Road between and including the junction with the A120 and the VE construction accesses and may also include a segregated WCH path, the requirement for which would be discussed and agreed with Essex County Council and informed by surveys of the use of Bentley Road by pedestrians, cyclists and horse-riders. The widening of Bentley Road would minimise any potential mounting of verges by HGVs and Part 9, Report 24: Outline CTMP that has been prepared to be submitted alongside the ES for the DCO application sets out the range of measures that could be implemented to manage and monitor VE construction traffic.
Little Bromley Parish Council Section 42 May 2023	*"Little Bromley Parish Council has concerns around Construction Dust and Mud - Five Estuaries are planning a 2-year plus construction project which will create significant dust, dirt and mud on roads. Residents properties and gardens will be affected, and our roads will be affected. LBPC would like to understand how Five Estuaries plan to mitigate this."*	Volume 6, Part 9, Report 24: Outline CTMP that has been prepared to be submitted alongside the ES for the DCO application sets out the range of measures that could be implemented to manage and monitor VE construction traffic, including dust and dirt repression
Little Bromley Parish Council Section 42 May 2023	*"Little Bromley Parish Council has concerns around Construction Traffic Management - LBPC understand that the current traffic management plan is essentially for traffic to be removed from the public highways onto haul roads. It has not been made clear how access of Five Estuaries traffic into haul roads will be achieved - will this be by traffic light control for example - as this could cause delays in the local road network. LBPC would also like to understand how Five Estuaries will ensure and police that HGV's and other development traffic does not route through the village of Little Bromley and surrounding single track roads."*	The VE construction accesses and haul road crossings have been discussed and agreed in principle with Essex County Council. The construction access and haul road crossings have been subject to a Stage 1 Road Safety Audit (RSA) and the designs have been amended where necessary to ensure they are safe. Some temporary traffic management measures (temporary speed limit reduction and temporary traffic control) have been identified at some of the construction accesses or haul road crossings (see Part 9, Report 24: Outline CTMP) and further traffic management measures would be discussed and agreed with Essex County Council as art of detailed design stage should the DCO be approved and set out in the final CTMP to be prepared and approved by Essex County Council. 100% of HGVs would be via Bentley Road to the south of the Onshore ECC and the A120 and whilst this route would be the route for the majority of construction workforce vehicle movements and would be the promoted route to the workforce, there may be a small number of cars/LGVs that could access the construction accesses through Little Bromley.
Little Bromley Parish Council Section 42 May 2023	*"Little Bromley Parish Council has concerns around Route Disruption - LBPC believe the impact on the local road network around Little Bromley parish will be high. Bentley Road, Paynes Lane, Spratts Lane, Barlon Road, Ardleigh Road and Grange Road will all be crossed by the Export Cable Corridor and Haul Roads. It has not been made clear how Bentley Road will be crossed (whether HDD will be used) but we have been advised that the other roads listed will be open trenched. Further to the West it is planned that Waterhouse Lane will be used as an access route (for HGV's and other vehicles) and it is also possible that Clacton Road (off Horsley Cross Roundabout) will be used with an access point into the Five Estuaries development. With all these roads affected there will be major disruption to village, farm and business traffic flows, with the key access into the A120 severely restricted."*	Bentley Road (via the A120) would be the only route for VE construction HGVs to access the VE construction accesses (for Onshore ECC Route Sections, 5,6,7, the OnSS and 400kV Connection). The B1035 Clacton Road (via the A120) would be the only route for VE construction HGVs to access the VE construction accesses (for Onshore ECC Route Section 5). There would be no delay in VE construction vehicles entering any construction access and would not cause any safety issues for other users of the highway network. The options for managing VE construction vehicle movements at the construction accesses and haul road crossings are set out in Part 9, Report 24: Outline CTMP and the confirmed measures would be set out in the final CTMP to be discussed and agreed with Essex County Council should the DCO be approved. The Applicant is committed to installing the cable under Bentley Road and Ardleigh Road using a trenchless crossing technique and therefore would be no disruption to the

Date and consultation phase/type	Consultation and key issues raised	Section where comment addressed
		highway network. The option has been retained to install the cable under Paynes Lane, Spratts Lane and Barlon Road (see paragraph 8.10.11) and should this be the preferred option, any temporary disruption would be for a very short duration,
Suffolk County Council Section 42 May 2023	*"Suffolk County Council expects traffic and transport impacts to be fully assessed and mitigated, for Suffolk especially in regard to any potential construction traffic impacts on Suffolk's rural road network and the limited options for suitable HGV and Abnormal Intervisible Loads (AIL) routes once the East Anglia Green route alignment has been chosen. Potential impacts to the A12 and wider road network will need to be agreed with Suffolk County Council."*	The only road in Suffolk included in the traffic and transport study area is the A12. The A137 through Manningtree has not been included in the study area as it not part of the proposed VE construction access route network for HGVs and is not likely to be used by many construction workers, given the limited accommodation options along the A137 corridor between Ipswich and Tendring. Construction workers arriving and departing to Ipswich would use the A12 and A120, which is a similar or shorter journey time to the majority of the VE construction access locations, particularly when there is known delays on the A137 route
Suffolk County Council Section 42 May 2023	*"Suffolk County Council request an Outline Port Construction Management Plan to manage traffic impacts that arise at any port as a result of the offshore elements of the proposal."*	The preferred base port(s) for the offshore construction and operation and maintenance activities of VE is not known as this would be decided post-consent. Port activity would be within the envelope assessed when the existing approvals for the Port were considered. Therefore, an assessment of these vehicle movements does not form part of this chapter.
Suffolk County Council Section 42 May 2023	*"Suffolk County Council request consideration of decommissioning and removal routes."*	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

8.4 SCOPE AND METHODOLOGY

SCOPE OF THE ASSESSMENT

8.4.1 The assessment of Traffic and Transport and the potential traffic impacts in relation to VE has been undertaken with reference to the following key guidance documents:

- Department of Levelling Up, Housing and Communities (DLUHC), 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), 1993;
- Institute of Environmental Management and Assessment (IEMA) Guidelines: (2023), Environmental Assessment of Traffic and Movement (referred to as 'the IEMA Guidelines or GEATM'); and
- Design Manual for Roads and Bridges (DMRB), LA 112 Population and Human Health.

8.4.2 The DLUHC 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 DLUHC 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 Overarching NPS for Energy (EN-1) and therefore the assessment will take account of this guidance.

8.4.3 Based on the guidance in GEART, 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 VE:

- 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;
- 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
- Delivery of AILs – the potential effect on road users and local residents and users of the highway network caused by the movement of AILs.

DRIVER SEVERANCE AND DELAY

8.4.4 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. 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.

8.4.5 Therefore, the significance of effect will be determined based on the magnitude of impact, receptor sensitivity and professional judgement.

8.4.6 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.

8.4.7 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.

8.4.8 During consultation with Essex County Council and NH, no 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). However, in the Section 42 responses and at ETG meetings, Essex County Council and NH requested that an analysis of potential peak hour vehicle movements associated with the construction of VE to be presented in the Transport Assessment with a justification for not undertaking any junction capacity assessments. This is provided in Section 5.3.6 of Volume 6, Part 6 (Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2).

8.4.9 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.

8.4.10 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.

8.4.11 Finally, the potential delay to users of the highway links that are proposed be improved to facilitate VE construction traffic that may require a temporary lane closure whilst the works are undertaken has been considered based on the relative importance of each link and the availability of an alternative route, using professional judgement.

COMMUNITY SEVERANCE

8.4.12 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.

8.4.13 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.

8.4.14 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.

8.4.15 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.

8.4.16 Therefore, the significance of effect will be determined based on the magnitude of impact, receptor sensitivity and professional judgement.

VULNERABLE ROAD USERS AND ROAD SAFETY

8.4.17 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."

8.4.18 In this context, an examination of the existing collisions/PIAs occurring on the construction vehicle access routes (that would be used by both HGVs and cars/ LGVs) within the onshore highway study area has been undertaken to identify any areas of the highway with concentrations of collisions, or roads with PIA rates that are higher than the national average (using 2022). 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 VE.

8.4.19 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."

8.4.20 This chapter 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."

8.4.21 Therefore, the significance of effect will be determined based on the magnitude of impact, receptor sensitivity and professional judgement.

PEDESTRIAN AMENITY

8.4.22 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. GEART 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.

8.4.23 Therefore, the significance of effect will be determined based on the magnitude of impact, receptor sensitivity and professional judgement.

FEAR AND INITIMIDATION

8.4.24 GEATM states:

The extent of fear and intimidation is dependent on:

- *The total volume of traffic*
- *The heavy vehicle composition*
- *The speed these vehicles are passing*
- *The proximity of traffic to people – and/or the feeling of the inherent lack of protection created by factors such as a narrow pavement median, a narrow path or a constraint (such as a wall or fence) preventing people stepping further away from moving vehicles.*

8.4.25 The assessment is based on defining a fear and intimidation degree of hazard as set out in Table 8.3.

Table 8.3 Fear and intimidation degree of hazard

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

8.4.26 The total score from all three elements is combined to provide a 'level' of fear and intimidation for all three elements as shown in Table 8.4.

Table 8.4 Levels of fear and intimidation

Level of fear and intimidation	Total hazard score
Extreme	71+
Great	41 – 70
Moderate	21 – 40
Small	0 -20

8.4.27 The magnitude of impact is approximated with reference to the changes in the level of fear and intimidation from baseline conditions as defined in Table 8.5.

DUST AND DIRT

8.4.28 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.

8.4.29 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.

8.4.30 The impact of dust associated with the construction of VE on air quality is provided in Volume 6, Chapter 11: Air Quality.

DELIVERY OF ABNORMAL INDIVISIBLE LOADS

8.4.31 The transportation of large AILs may lead to delays on the highway network. The construction of the OnSS would require the delivery of AILs, as summarised below:

- 2 to 4 Transformers on 20-24 axle frame trailers; and
- 8 to 12 items of Oversized indivisible plant such as shunt reactors and STATCOM equipment buildings. These would be delivered via special order vehicles (>44t and oversize).

8.4.32 In terms of an initial assessment, a swept path analysis of the A120 Bentley Road junction has been undertaken, which shows the transformer delivery vehicle would need to turn into Bentley Road from the A120 east via a contraflow using the eastbound carriageway for a section of around 200m.

8.4.33 No modifications to the junction (other than those proposed for standard construction HGVs) would be required.

8.4.34 Whilst the above proposal has been agreed in principle by NH, additional options may be considered during the detailed design stage, should the DCO be approved.

USERS OF PUBLIC RIGHTS OF WAY (PROW)

8.4.35 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.

8.4.36 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.

8.4.37 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.

8.4.38 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."

8.4.39 Therefore, the significance of effect will be determined based on the magnitude of impact, receptor sensitivity and professional judgement.

8.4.40 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

8.4.41 The significance of effect will be determined based on the magnitude of impact, receptor sensitivity and professional judgement.

8.4.42 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."

8.4.43 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."

8.4.44 The scope of assessment has been defined as all PRoW within the Order Limits that might be directly impacted by the construction works.

OTHER IMPACTS

8.4.45 Traffic-borne noise and vibration effects and air quality effects informed by the traffic data outlined in this chapter are assessed in Volume 6, Chapter 10: Noise and Vibration, Volume 6, Part 4, Chapter 2: Human Health and Major Disasters and Volume 6, Part 4, Chapter 1: Climate Change respectively.

8.4.46 The traffic data provided to inform Volume 6, Chapter 10: Noise and Vibration and Volume 6, Chapter 11: Human Health and Climate Change 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 VE.

OPERATIONAL AND MAINTENANCE ACTIVITIES

8.4.47 Following the PINS comments contained within the Scoping Opinion (PINS, November 2021), it was agreed that effects associated with Operations and Maintenance (O&M) activities could be scoped out, given that expected number of vehicle movements would be negligible; however, they should be set out.

8.4.48 During the O&M period the following planned vehicle movements are estimated:

- Landfall/Onshore ECC – One annual inspection/testing visit to each cable joint pit/transition joint bay by personnel using a LGV; and
- OnSS – Weekly visits would be required by approximately two vehicles (approximately eight traffic movements per week). During two-week annual maintenance period this would increase to approximately four to eight traffic movements per day.

8.4.49 Unplanned maintenance activities may require vehicles similar to construction, but these would be extremely rare occurrences.

DECOMMISSIONING ACTIVITIES

8.4.50 No decision has yet been made regarding the final decommissioning policies for VE as it is recognised that industry best practice, rules and legislation change over time. The detail and scope of decommissioning works will be determined by the relevant legislation and guidance at the time of decommissioning and will be agreed with the regulator with decommissioning plan provided.

8.4.51 However, it is considered likely that the proposed onshore substation would be removed and will be reused or recycled and that the onshore cables would also be removed and recycled, with the transition bays and cable ducts left in situ. For the purposes of a worst-case scenario, it is considered that magnitude of impact and effects associated with decommissioning would be no greater than those identified for the construction phase.

STUDY AREA

8.4.52 The onshore Traffic and Transport highway study area (as shown in Figure 8.3) has been informed by determining the most probable routes for traffic, for both the movement of materials and employees. The study area incorporates probable routes for the construction, operational and decommissioning phases of VE 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 VE (directly). The construction phase of VE 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.

8.4.53 The extent of the onshore highway study area has been presented during the Evidence Plan process. The onshore highway study area is described in relation to the relevant Onshore ECC Route Section (as described in Volume 6, Chapter 1: Onshore Project Description), which are as follows:

- Route Section 1: encompasses the landfall between Holland-on-sea and Frinton-on-sea including beach access onto Manor Way and extends inland as far as the Great Eastern Mainline spur railway crossing;
- Route Section 2: continues north from the East Coast Main Line Spur railway line to the west of Kirby Cross across agricultural fields towards the B1033 (Thorpe Road);
- Route Section 3: passes north of the B1033 (Thorpe Road) and the B1034 (Sneating Hall Lane) then continues north-west through agricultural land around Thorpe Le Soken crossing Landermere Road, Golden Lane towards the intersection of Thorpe Road/Swan Road;
- Route Section 4: continues northwards through agricultural fields to the east of Tendring village, passing to the east of Tendring Heath towards the A120 (Harwich Road). The section is divided into section 4A (south of Tendring Brook) and section 4B (north of Tendring Brook);
- Route Section 5: extends from the north of the crossing of the A120 to Bentley Road;
- Route Section 6: extends from Bentley Road to the crossing of Ardleigh road. It crosses Payne's Lane, Spratts Lane and Barlon Road; and
- Route Section 7: Includes the OnSS. It extends north from the crossing of Ardleigh Road to the proposed location of the NGET substation.

8.4.54 The onshore highway study is illustrated in Figure 8.1 and comprises the following highway links, which form the HGV and workforce construction access routes (see Figure 8.2):

- A12 (Junction 29);
- A120 (between the A12 and the Harwich International Port);
- A133 (between the A120 and the B1027);
- B1027 (St. John's Road/Valley Road);
- B1032 (Holland Road/Frinton Road/Little Clacton Road);
- B1033 (Colchester Road/Abbey Street/Frinton Road/Thorpe Road);

- B1035 (Tendring Road/Thorpe Road/South of A120/Clacton Road);
- B1411 (Weeley Bypass/Clacton Road/Weeley Road);
- B1414 (Harwich Road/Station Road); and
- Bentley Road.

8.4.55 The onshore highway study area also includes the following highway links, which form construction workforce access routes (see noting that in reality, other highway links would be utilised by workforce vehicle movements; however, these highway links are considered to have the potential for the greatest impact during the construction of VE (see Figure 8.2) :

- A133 (Clacton Road/Main Road) between Colchester and the A133;
- The B1027 St John's Road (west of Clacton);
- B1027 Colchester Road (St Osyth Park);
- B1441 via Little Clacton;
- Progress Way
- B1029 Harwich Road/Frating Road
- Harwich Road;
- B1032 at Kirby Cross;
- B1033 Thorpe Road;
- B1029 (north of Harwich Road); and
- Waterhouse Lane/Little Bromley Road/Ardleigh Road[i]

8.4.56 Although construction traffic associated with VE will use the wider highway network outside of the study area i.e., the routes listed above, it is considered that construction traffic volume will have dissipated such that significant impacts on the highways network are not anticipated and so these wider routes are not included in the study area.

8.4.57 Additionally, the study area includes the roads that would have a haul road crossing (see Figure 8.3):

- Little Clacton Road;
- B1414 Landemere Road;
- B1034 Sneating Hall Lane;
- Golden Lane;
- Swan Road;
- Lodge Lane;
- Wolves Hall Lane;
- Stones Green Road; and
- Spratts Lane.

[i] Ardleigh Road would also be a haul road crossing

8.4.58 Finally, the study area includes the roads that would have a haul road crossing and would be impacted due to open trenching technology utilised to install the ECC i.e., where temporary road closures would be required (see Figure 8.3)

- Damant's Farm Lane;
- Payne's Lane; and
- Barlon Road.

8.4.59 Flexibility in the project design may result in open trenching technology being utilised at the above locations and therefore the assessment undertaken in this chapter is a worst-case scenario.

8.4.60 The study area also includes all PRoW that are directly impacted by the construction works (crossed by or in close proximity to a construction access, Temporary Construction Compound (TCC) or haul road) for the Onshore ECC.

Figure 8.1 Traffic and transport study area

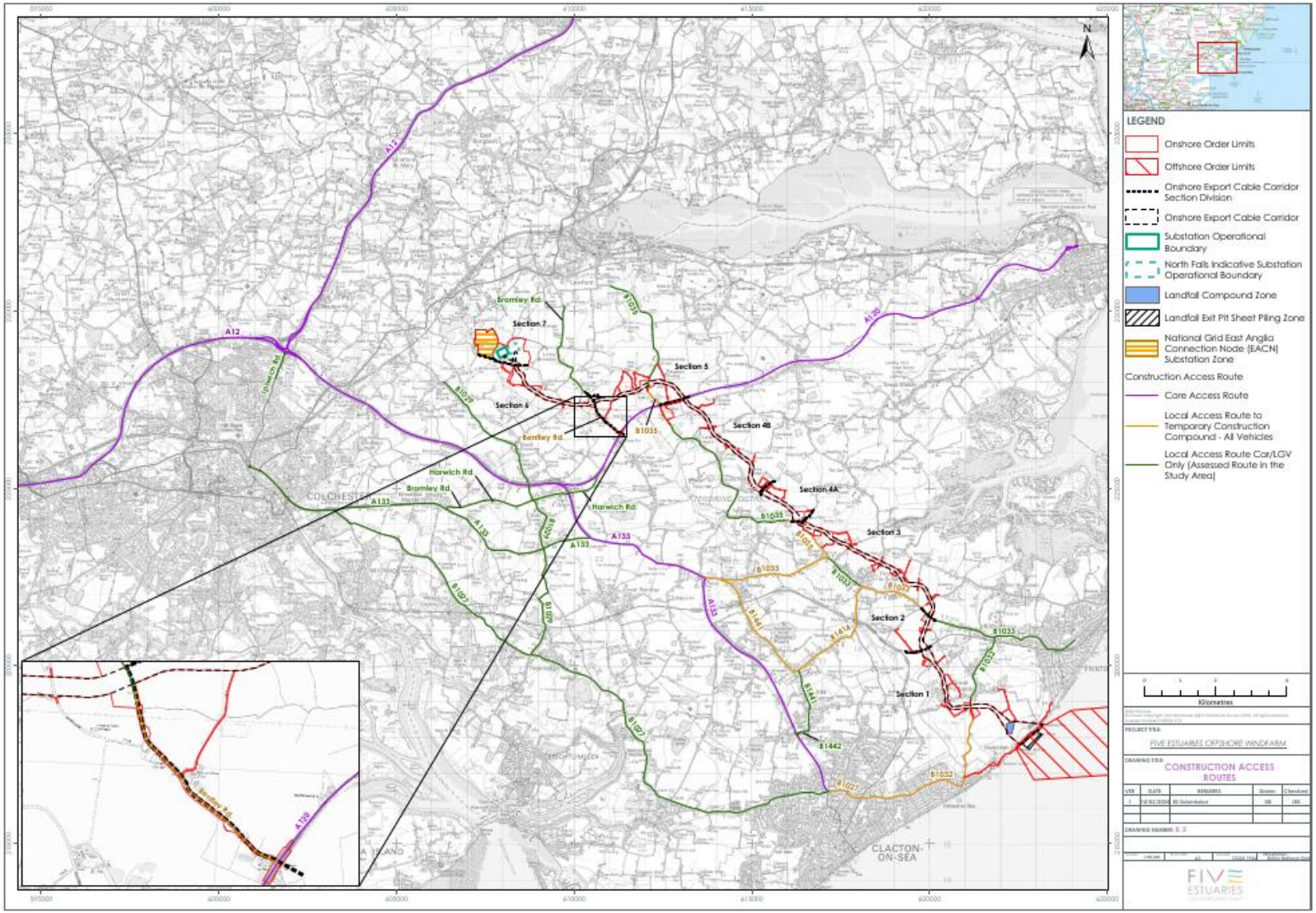

Figure 8.2 Construction access routes

8.5 DATA SOURCES

8.5.1 A number of baseline data sources (existing and new) have been used to inform this chapter and the design of VE. The data sources which are described in detail in Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2 have been discussed and agreed through the Evidence Plan process, and are summarised below:

- Existing data:
  - A desktop appraisal of the Traffic and Transport aspects of the study area (Google Earth);
  - Average Daily Traffic (ADT) flows for the Local Road Network (LRN) and Annual Average Daily Traffic (AADT) for the Strategic Road Network (SRN) (DfT National Road Statistics[ii] or NH's Webtris database[iii]);
  - STATS19 accident data for the LRN (Essex County Council);
  - PRoW maps (Essex County Council); and
  - Accident data for the SRN (Crashmap[iv]).
- New data:
  - Automatic Traffic Counters (ATCs) installed at 34 locations across the study area to collect traffic flow and speed data for VE (noting not all were ultimately required for the purposes of the Traffic and Transport assessment).

ASSESSMENT METHODOLOGY

8.5.2 This Chapter takes an appropriate and topic specific approach to the assessment of VE during the construction phase based on the design parameters set out in Volume 6, Part 3, Chapter 1: Project Description. Impacts during the operational and decommissioning phases have been scoped out.

8.5.3 The approach for the assessment of Traffic and Transport effects has been to define the level of traffic anticipated to access each TCC associated with VE during the construction phase, calculated from first principles (a method based on the quantities of materials required for the construction of VE and the corresponding number of HGVs and the number of expected construction workers) which has been distributed over an anticipated construction programme of 18 months for the Onshore ECC and 19-months for the OnSS (as shown in Figure 1.2 of Volume 6, Part 3, Chapter 1: Project Description).

8.5.4 In addition to the anticipated increase in vehicle movements associated with the construction phase of VE, this chapter also considers the disruption to existing users of PRoW and roads that would be potentially impacted by the construction works.

[ii] https://roadtraffic.dft.gov.uk
[iii] https://webtris.highwaysengland.co.uk
[iv] https://crashmap.co.uk

8.5.5 The three scenarios for onshore construction of VE with NF OWF, as set out in the (Volume 9, Report 30: Co-ordination Document are:

- **Scenario 1** – parallel construction. With civils works for the Onshore ECC being carried at the same time. Projects constructed together with commonality and maximum opportunity to share infrastructure to reduce the overall cumulative impacts;
- **Scenario 2** – overlapping construction – both projects construction carried out independently, but opportunities for reuse of enabling infrastructure e.g. haul roads /site accesses etc. with the other project reinstating. Cumulative impacts are for an extended construction period and some limited reduction in overall impacts; and
- **Scenario 3** – Sequential construction. Projects are on significantly different programmes which mean that haul roads and TCC's are reinstated prior to the second project proceeding. Cumulative impacts are for a potential construction period of 6 years+. No reduction in overall impacts for the schemes from sharing of infrastructure.

8.5.6 The draft DCO (dDCO) sets out two 'Build Options' for VE:

- "Build Option 1" means Scenario 1 in which the first project i.e. either VE or NF OWF will deliver works to support grid connection co-ordination, including the laying of onshore cable ducts for the second project; and
- "Build Option 2" means Scenarios 2 and 3 in which only works required for VE are constructed.

8.5.7 For the assessment of VE, the Maximum Design Scenario (MDS) would be Build Option 1 in Scenario 1.

8.5.8 This chapter therefore provides a reasonable worst-case assessment of the likely significant Traffic and Transport effects of the construction phase of VE, based on the MDS as follows:

- The maximum expected number of construction worker vehicle movements in one month at each construction access; and
- The maximum expected number of HGV movements in one month at each construction access.

8.5.9 The effects of the forecast construction phase traffic have been assessed against the measured future baseline in terms of existing traffic levels and then compared to standard practice criteria as set out in Section 8.10.

ASSESSMENT CRITERIA AND ASSIGNMENT OF SIGNIFICANCE

8.5.10 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 VE, establishing the scope of the receptors that may be affected and quantifying these effects utilising GEATM, DMRB LA 112 and professional judgement.

8.5.11 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.

8.5.12 The magnitude of impact has been considered according to the criteria defined in Table 8.5.

Table 8.5 – Impact magnitude definitions

Magnitude of impact	Driver severance and delay	Community severance/ Dust and dirt	Vulnerable road users and road safety	Pedestrian amenity	Fear and Intimidation	Users of ProW
High	Consideration of a quantitative assessment of road capacity, using professional judgement, based on existing traffic flows and predicted future traffic levels Qualitative assessment of inconvenience associated with a temporary road closure	>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	Two step changes in level	Increase in total traffic flows of 90% and above on a highway link intersecting a ProW. OR >500m increase (adverse) /decrease (beneficial) in WCH journey length.
Medium		31% to 60% increase in traffic			One step change in level, but with • >400 vehicles increase in /average 18hr all vehicle two-	Increase in total traffic flows of 60 to 89% on a highway link intersecting a ProW. OR

Magnitude of impact	Driver severance and delay	Community severance/ Dust and dirt	Vulnerable road users and road safety	Pedestrian amenity	Fear and Intimidation	Users of ProW
					way all vehicle flow; and/or • >500 heavy vehicle increase in total 18hr heavy vehicle flow	>250m – 500m increase (adverse) or decrease (beneficial) in WCH journey length.
Low		10% to 30% increase in traffic			One step change in level, but with • <400 vehicles increase in /average 18hr all vehicle two-way all vehicle flow; and/or • <500 heavy vehicle increase in total 18hr heavy vehicle flow	Increase in total traffic flows of 30 to 59% on a highway link intersecting a ProW. OR 50m to 250m increase (adverse) or decrease (beneficial) in WCH journey length.

Magnitude of impact	Driver severance and delay	Community severance/ Dust and dirt	Vulnerable road users and road safety	Pedestrian amenity	Fear and Intimidation	Users of ProW
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%.	No change in step changes	Increase in total traffic flows of 29% on a link intersecting a ProW. OR <50m increase (adverse) or decrease (beneficial) in WCH journey length. Or no increase.

8.5.13 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.

8.5.14 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.

8.5.15 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.

8.5.16 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 8.6.

8.5.17 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.

8.5.18 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 8.6 – Sensitivity/importance of the environment

Sensitivity	Impact	Description/reason
Very High	WCH users of PRoW	National trails and routes likely to be used for both commuting and recreation with frequent use with little/no potential for substitution. Routes regularly used by vulnerable travellers such as the elderly, school children and people with disabilities, who could be disproportionately affected by small changes in the baseline due to potentially different needs. PRoW for WCH crossing roads with >16,000 vehicles per day
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.
	WCH users of ATRs and 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 – 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.

Sensitivity	Impact	Description/reason
		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

8.5.19 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 8.7 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 8.7 – Matrix to determine significance

			Sensitivity				
			Very High	High	Medium	Low	Negligible
Magnitude	Adverse	High	Major	Major	Major	Moderate	Minor
		Medium	Major	Major	Moderate	Minor	Negligible
		Low	Major/Moderate	Moderate	Minor	Minor	Negligible
	Neutral	Negligible	Moderate/Minor	Minor	Minor	Negligible	Negligible
	Beneficial	Low	Major/Moderate	Moderate	Minor	Minor	Negligible
		Medium	Major	Major	Moderate	Minor	Negligible
		High	Major	Major	Major	Moderate	Minor

Note: Effects of 'moderate' significance or greater are defined as significant with regards to the EIA Regulations 2017

8.6 UNCERTAINTY AND TECHNICAL DIFFICULTIES ENCOUNTERED

FORECAST TRIP GENERATION, DISTRIBUTION AND ASSESSMENT SCENARIOS

8.6.1 A number of assumptions have been used in order to identity the vehicular trip generation (HGV and workforce vehicles) anticipated during the construction phase of VE (approximately 24-months), which are summarised in Section 8.8, and detailed in Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2, create the MDS.

COVID-19 AND THE IMPACT ON PERSONAL INJURY ACCIDENT DATA

8.6.2 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 available[v] (which is June 2022 for the LRN and December 2022 for the SRN), for a robust assessment.

ATC INACCURACIES

8.6.3 There are inaccuracies with the vehicle class categories used in the ATC data, in terms of the identification of HGVs and an overestimated Other Goods Vehicle 1 (OGV1) category. This is due to the method of traffic data collection using ATC equipment, which is based on wheelbase (the distance between the front and rear axles of a vehicle). Since the inception of this method of traffic flow data collection there has been an increase in wheelbase of many non-goods delivery vehicles (such as twin-cab pickup vehicles).

8.6.4 The method of compensating for the inaccuracies in the ATC data is described in Section 4.1.2 and the resulting traffic flows are shown in Table 4.4 of Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2.

8.7 EXISTING ENVIRONMENT

HIGHWAY NETWORK

8.7.1 A detailed description of the highway network within the study area is provided in Section 2.3 of Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1: The highway links within the study area that would be used by VE construction vehicles are identified in Paragraphs 8.4.53 to 8.4.56 and shown on Figure 8.2.

CONSTRUCTION ACCESS LOCATIONS

8.7.2 The proposed construction access locations are listed in Table 8.8 alongside the relevant Onshore ECC Route Section, which each access and TCC relates to the proposed construction access locations and TCCs are also shown in Figure 8.3.

[v] At the time of data collection

8.7.3 The construction access locations have been discussed with Essex County Council at a number of ETG meetings, who has agreed to these in principle, subject to the detailed design.

8.7.4 It is proposed that the majority of the construction accesses would be temporary and following completion of construction works will be removed. The following construction accesses are improvements of existing access points and may be retained:

- AC-1 off Clacton Road
- AC-2 off Clacton Road
- AC-4 off the Tendring Road
- AC-6 off Tendring Road
- AC-8B off Clacton Road, North of Horsley Cross

8.7.5 Where accesses are located opposite each other i.e. AC-9 and AC-10 on Bentley Road, they would also allow construction traffic to cross from one side of the public highway to the other i.e. to traverse along the temporary haul road and minimise trips included on the local highway network.

8.7.6 General Arrangement (GA) drawings for the proposed construction accesses between landfall and the B1035 Clacton Road have been prepared by Royal Haskoning DHV (RKDHV) (the NF transport consultants), which are included in Appendix P of Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2.

8.7.7 GA drawings for the proposed construction accesses on Bentley Road and Ardleigh Road have been prepared by Mott MacDonald (transport consultants for VE, NF and NGET), which are included in Appendix P of Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2.

8.7.8 The construction access GA designs have been subject to a Stage 1 Road Safety Audit (RSA), which was undertaken by SLR and designer's response reports were prepared by RHDHV / Mott Macdonald and are provided in Appendix R and Appendix S of Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6 and Annex 8.2: Transport Assessment – Part 2.

8.7.9 Whilst the access locations have been identified, the exact locations may change once detailed design investigations have been undertaken, should the DCO be approved.

Table 8.8: Construction access locations/TCCs

Access/TCC	Highway link	Details
AC-0	Holland Haven Country Park car park access road	For access to the beach for personnel to monitor Horizontal Directional Drilling (HDD) progress
AC-1/TCC 1	B1032 Clacton Road	For access to Onshore ECC Route Section 1, between landfall and the Great Eastern Mainline Spur
AC-2/TCC 2	B1032 Clacton Road	For access to Onshore ECC Route Section 1, between landfall and the Great Eastern Mainline Spur
AC-3A/TCC 3	B1033 Thorpe Road	For access to Onshore ECC Route Section 2 between the Great Eastern Mainline Spur and the B1033 Thorpe Road
AC-3B	B1033 Thorpe Road	For access to Onshore ECC Route Section 3 between the B1033 Thorpe Road and the B1035 Tendring Road
AC-4/TCC 4	B1035	For access to Onshore ECC Route Section 3 between the B1033 Thorpe Road and the B1035 Tendring Road
AC-5/TCC 5	B1035 Thorpe Road	For access to Onshore ECC Route Section 4a between B1035 Tendring Road and Tendring Brook
AC-6/TCC 6	B1035 south of A120	For access to Onshore ECC Route Section 4b between the A120 and Tendring Brook (or the B1035 Tendring Road if haul road crossing established)
AC-7/TCC 6	B1035 south of A120	
AC-8A/TCC 7	B1035 Clacton Road	For access to Onshore ECC Route Section 5 between the B1035 Clacton Road and the A120
AC-8B/TCC 8	B1035 Clacton Road	For access to Onshore ECC Route Section 5 between the B1035 Clacton Road and Bentley Road
AC-9/TCC 11	Bentley Road	For access to Onshore ECC Route Section 6/7, the OnSS and 400kV route

Access/TCC	Highway link	Details
AC-10/TCC 9	Bentley Road	For access to Onshore ECC Route Section 5 between the B1035 Clacton Road and Bentley Road
AC-11/TCC 10	Bentley Road	For access to Onshore ECC Route Section 6/7, the OnSS and 400kV route
AC-12/12A/OnSS TCC	Ardleigh Road	Could be used during periods of construction works set up or close down and for workforce vehicle movements via Waterhouse Lane/Little Bromley Road/Ardleigh Road.

HAUL ROAD CROSSING LOCATIONS

8.7.10 The proposed haul road crossing locations, which would be shared by VE and NF OWF are listed in Table 8.9 and the relevant Onshore ECC Route Section (as described in Volume 6, Part 3, Chapter 1: Project Description) each crossing relates to.

8.7.11 It is proposed that the majority of the haul road crossings would be temporary and following completion of construction works will be removed. The following haul road crossing is an improvement to existing access points and may be retained:

- CR-4 off Landemere Road in both directions

8.7.12 The haul road crossings would allow construction traffic to cross from one side of the public highway to the other i.e. to traverse along the temporary haul road and minimise trips included on the local highway network. This also applies to construction accesses that are opposite each other i.e. AC-9 and AC-10 on Bentley Road.

8.7.13 General Arrangement (GA) drawings for the proposed haul road crossing between Little Clacton Road and Barlon Road have been prepared by RHDHV, which are included in Appendix S of Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2.

8.7.14 A GA drawing for the proposed haul road crossing on Ardleigh Road has been prepared by Mott MacDonald, which is included in Appendix Q of Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2.

8.7.15 The haul road crossing GA designs have been subject to a Stage 1 Road Safety Audit (RSA), which was undertaken by SLR and a designer's response report was prepared by RHDHV and are provided in Appendix R and Appendix S of Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2.

8.7.16 Whilst the haul road crossing locations have been identified, the exact locations may change once detailed design investigations have been undertaken, should the DCO be approved. The final design will be subject to approval under the DCO.

Table 8.9: Haul road crossing locations

Crossing	Highway link	ECC Route Section
CR-1	Little Clacton Road	1
CR-2	B1034 Sneating Hall Lane	3
CR-3	Damant's Farm Lane	3
CR-4	B1414 Landermere Road	3
CR-5	Golden Lane	4
CR-6	Lodge Lane	4b
CR-7	Wolves Hall Lane	4b
CR-8A and CR-8B	Stones Green Road	6
CR-9A and CR-9B	Payne's Lane	6
CR-10A and CR-10B	Spratt's Lane	6
CR-11A and CR-11B	Barlon Road	6
AC-12/12A / CR-12	Ardleigh Road	6/7

620000 621000 622000 623000 624000

220000 219000 218000 217000

Section 1

FRINTON ON-SEA

N

B1032

CR-1

AC-2

AC-1

AC-0

TCC2

TCC1

Beach Works TCC

Holland-on-Sea

Great Holland

Holland Haven

Frinton Golf Course

LEGEND

- Onshore Order Limits
- Offshore Order Limits
- Onshore Export Cable Corridor Section Division
- Onshore Export Cable Corridor
- Temporary Beach Access Zone
- Temporary Construction Compound
- Off Route Haul Road
- Access and Crossing Zone
- Landfall Compound Zone
- Indicative Landfall Compound

Construction Access Route

- Local Access Route to Temporary Construction Compound - All Vehicles
- Local Access Route Car/LGV Only (Assessed Route in the Study Area)

0 125 250 500

Metres

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PROJECT TITLE:

FIVE ESTUARIES OFFSHORE WINDFARM

DRAWING TITLE:

CONSTRUCTION ACCESS POINTS, TCCs AND HAUL ROAD CROSSINGS

VER	DATE	REMARKS	Drawn	Checked
1	07/03/2024	ES Submission	DB	JRS

DRAWING NUMBER: 8.3

Sheet No: 1 of 5

SCALE:	PLOT SIZE:	DATUM:	PROJECTION:
1:15,000	A3	OSGB 1936	British National Grid

FIVE ESTUARIES OFFSHORE WIND FARM

620000 621000 622000 623000 624000

219000 220000

218000

217000

Section 1

CR-1

AC-2

AC-1

AC-0

TCC2

TCC1

Beach Works TCC

B1032

Great Holland

FRINTON ON-SEA

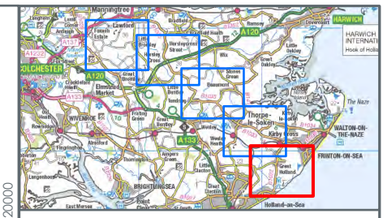
Holland-on-Sea

Holland Brook

Pickers Ditch

Kirby Brook

N



LEGEND

- Onshore Order Limits
- Offshore Order Limits
- Onshore Export Cable Corridor Section Division
- Onshore Export Cable Corridor
- Temporary Beach Access Zone
- Temporary Construction Compound
- Off Route Haul Road
- Access and Crossing Zone
- Landfall Compound Zone
- Indicative Landfall Compound

Construction Access Route

- Local Access Route to Temporary Construction Compound - All Vehicles
- Local Access Route Car/LGV Only (Assessed Route in the Study Area)

0 125 250 500

Metres

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FIVE ESTUARIES OFFSHORE WINDFARM

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DRAWING NUMBER: 8.3

Sheet No: 1 of 5

SCALE:	PLOT SIZE:	DATUM:	PROJECTION:
1:15,000	A3	OSGB 1936	British National Grid

FIVE ESTUARIES OFFSHORE WIND FARM

617000 618000 619000 620000 621000 622000

223000 222000 221000 220000

CR-5
CR-4
CR-3
CR-2
AC-3A
AC-3B
TCC3
Section 3
Section 2
Section 2
Section 1

B1035
B1033
B1414
B1032

Thorpe Green
Thorpe-le-Soken
Landermere
Lane End
Thorpe Cross
Pig Street
Holland Brook

N

LEGEND

- Onshore Order Limits
- Onshore Export Cable Corridor Section Division
- Onshore Export Cable Corridor
- Temporary Construction Compound
- Off Route Haul Road
- Access and Crossing Zone

Construction Access Route

- Local Access Route to Temporary Construction Compound - All Vehicles
- Local Access Route Car/LGV Only (Assessed Route in the Study Area)

0 125 250 500
Metres

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FIVE ESTUARIES OFFSHORE WINDFARM

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DRAWING NUMBER: 8.3

Sheet No: 2 of 5

SCALE:	PLOT SIZE:	DATUM:	PROJECTION:
1:15,000	A3	OSGB 1936	British National Grid

FIVE ESTUARIES OFFSHORE WIND FARM

614000 615000 616000 617000 618000

226000 225000 224000 223000

N

Tendring Heath
CR-8
CR-8A
CR-7
CR-6
CR-5
Section 4b
Section 4a
Section 3
TCC5
TCC4
AC-5
AC-4
B1035
B1033
Tendring
Tendring Green
Goose Green
Stones Green
Oak Corner
Beaumont
Far Thorpe Green
Thorpe Green
Weeley

LEGEND

- Onshore Order Limits
- Onshore Export Cable Corridor Section Division
- Onshore Export Cable Corridor
- Temporary Construction Compound
- Off Route Haul Road
- Access and Crossing Zone

Construction Access Route

- Local Access Route to Temporary Construction Compound - All Vehicles
- Local Access Route Car/LGV Only (Assessed Route in the Study Area)

0 125 250 500
Metres

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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

DRAWING TITLE:
CONSTRUCTION ACCESS POINTS, TCCs AND HAUL ROAD CROSSINGS

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1	07/03/2024	ES Submission	DB	JRS

DRAWING NUMBER: 8.3

Sheet No: 3 of 5

SCALE:	PLOT SIZE:	DATUM:	PROJECTION:
1:15,000	A3	OSGB 1936	British National Grid

FIVE ESTUARIES
OFFSHORE WIND FARM

610000 611000 612000 613000 614000

229000 228000 227000 226000

N

CR-9 AC-10 AC-11 CR-9A AC-9 Bentley Rd. A120

Bromley Rd. TCC10 TCC9 AC-10 AC-11 TCC11 AC-9 CR-9 CR-9A Section 5 Section 6 Bentley Rd A120

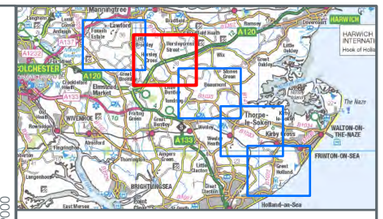
TCC8 TCC7 AC-8B AC-8A B1035 Horsley Cross Horsleycross Street Aldercar

Section 5 Section 4b Goose Green

AC-7 TCC6 AC-6 Holland Brook

CR-8 CR-8A Tendring Heath CR-7 B1035

Little Bentley Mill Green Tendring Green



LEGEND

- Onshore Order Limits
- Onshore Export Cable Corridor Section Division
- Onshore Export Cable Corridor
- Substation Temporary Construction Haul Road
- Temporary Construction Compound
- Off Route Haul Road
- Access and Crossing Zone

Construction Access Route

- Core Access Route
- Local Access Route to Temporary Construction Compound - All Vehicles
- Local Access Route Car/LGV Only (Assessed Route in the Study Area)

Note.
Onshore Export Cable Corridor Section Division has been Removed in Inset for Clarity.

0 125 250 500
Metres

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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

DRAWING TITLE:
CONSTRUCTION ACCESS POINTS, TCCs AND HAUL ROAD CROSSINGS

VER	DATE	REMARKS	Drawn	Checked
1	07/03/2024	ES Submission	DB	JRS

DRAWING NUMBER: 8.3

Sheet No: 4 of 5

SCALE:	PLOT SIZE:	DATUM:	PROJECTION:
1:15,000	A3	OSGB 1936	British National Grid

FIVE ESTUARIES OFFSHORE WIND FARM

606000 607000 608000 609000 610000

230000 229000 228000 227000

N

Foxash Estate

Section 7

Section 6

Little Bromley Rd / Ardleigh Rd

AC-12

Bromley Rd.

Waterhouse Lane

Burnt Heath

Bromley Cross

B1029

Little Bromley

CR-11

CR-11A

CR-10

CR-10A

CR-9

CR-9A

TCC9

TCC10

TCC11

AC-10

AC-11

AC-9

Section 5

Section 6

ROMAN POTTERY KILN

Bromley Brook

LEGEND

- Onshore Order Limits
- Onshore Export Cable Corridor Section Division
- Onshore Export Cable Corridor
- Substation Operational Boundary
- Substation Temporary Construction Compound
- Ardleigh Road Drainage Zone
- Indicative Substation Access Route
- Substation Temporary Construction Haul Road
- North Falls Indicative Substation Operational Boundary
- Temporary Construction Compound
- Access and Crossing Zone
- National Grid EACN Substation Zone

Construction Access Route

- Local Access Route to Temporary Construction Compound - All Vehicles
- Local Access Route Car/LGV Only (Assessed Route in the Study Area)

0 125 250 500

Metres

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PROJECT TITLE:

FIVE ESTUARIES OFFSHORE WINDFARM

DRAWING TITLE:

CONSTRUCTION ACCESS POINTS, TCCs AND HAUL ROAD CROSSINGS

VER	DATE	REMARKS	Drawn	Checked
1	07/03/2024	ES Submission	DB	JRS

DRAWING NUMBER: 8.3

Sheet No: 5 of 5

SCALE:	PLOT SIZE:	DATUM:	PROJECTION:
1:15,000	A3	OSGB 1936	British National Grid

FIVE ESTUARIES OFFSHORE WIND FARM

TRAFFIC FLOWS

8.7.17 An analysis of the existing traffic flows on the highway links within the study area (ADT/AADT and highway network peak hours) is provided in Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2 and is summarised below.

ORIGINAL DATA

8.7.18 The proposed highway network that is likely to be affected during the construction phase of VE from an increase in vehicle movements is set out in Table 8.10, which also sets out the ADT/AADT (total and HGV) and HGV percentage of the original data, taking into account the adjusted HGV flows of the ATC data, as described in Section 3.1.2 of Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2 and Paragraph 8.6.3 of this chapter.

8.7.19 The data locations are shown in Figure 8.8.

8.7.20 For the A133 between the B1033 and the B1027 and the B1027 St John's Road/Valley Road, two references are showing as existing DfT data and new ATC data has been used for the HGV percentage comparison.

Table 8.10: Highway links ADT/AADT

Link ID[vi]	Source	Year	Highway link	ADT/AADT Total vehicles	HGVs	HGV (%)
1	DfT	2019	A12 (N)	60,190	5,704	9.5
2	DfT	2019	A12 (S)	70,063	5,832	8.3
6	Webtris	2022	A12 (N) off-slip at J29 Roundabout	9,485	793	8.4
7	Webtris	2023	A12 (N) on-slip at J29 Roundabout	9,170	1,112	12.1
8	Webtris	2022	A120 (S) off-slip at J29 Roundabout	7,229	686	9.5
9[vii]	Webtris	2022	A120 (E) on-slip at J29 Roundabout	8,468	836	9.9
10	DfT	2019	A120 between J29 and A133	44,278	2,685	6.1
11	DfT	2019	A120 (A133 to Harwich Road)	12,248	1,402	11.4
12	DfT	2019	A120 (Harwich Road to Bentley Road)	12,405	1,497	12.1
13	DfT	2019	A120 (Bentley Road to B1035)	12,561	1,591	12.7
14	Webtris	2023	A120 (East of B1035)	15,351	1,827	11.9
15	Webtris	2023	A120 at Harwich	10,495	1,667	15.9
16	DfT	2019	A133 (A120 to A133 Main Road)	21,796	689	3.2
17	DfT	2019	A133 (A133 Main Road to B1033)	30,732	1,134	3.7
18	DfT	2019	A133 (B1033 to B1027)	32,030	1,283	4.0
19	DfT	2019	A133 Clacton Road (Elmstead Market)	9,419	224	2.4
20	DfT	2019	A133 Main Road	11,815	591	5.0
21	DfT	2019	B1027 St John's Road (west of Clacton)	15,203	136	0.9

[vi] No VE construction vehicle movements forecast on highway links 3 to 6 and therefore are not presented in this Chapter.
[vii] Calculated from other highway links.

Link ID[vi]	Source	Year	Highway link	ADT/AADT Total vehicles	HGVs	HGV (%)
22	DfT	2019	B1027 Colchester Road (St Osyth Park)	10,964	155	1.4
23	ATC	2022	B1027 Valley Road (Clacton)	13,617	212	1.6
24	ATC	2022	B1032 Frinton Road	7,079	137	1.9
25	ATC	2022	B1032 Clacton Road	6,798	119	1.7
26	ATC	2022	B1033 Colchester Road (west of B1441)	14,046	290	2.1
27	ATC	2022	B1441 Clacton Road	5,584	143	2.6
28	ATC	2022	B1414 Harwich Road	5,214	113	2.2
29	ATC	2022	B1033 Frinton Road	11,511	211	1.8
30	ATC	2022	B1033 Colchester Road (east of B1441)	9,415	230	2.4
31	ATC	2022	B1035 Tendring Road	1,478	41	2.8
32	ATC	2022	B1035 Thorpe Road	2,133	49	2.3
33	ATC	2022	B1035 south of A120	5,245	129	2.5
34	ATC	2022	B1035 Clacton Road	7,869	193	2.5
35[viii]	ATC	2022	Bentley Road	887	28	3.2
44	DfT	2022	B1029 (North of Harwich Road)	2,100	47	2.2
45[ix]	DfT	2022	Waterhouse Lane	401	12	3.0

[viii] No baseline traffic data available on highway links 36 to 43; however, these are screened out of any formal assessment in Section 8.10.
[ix] No baseline traffic data available on Little Bromley Road/Ardleigh Road between Waterhouse Lane and the OnSS access on Ardleigh Road; however, the traffic flows are assumed to be very low, with the flow on Waterhouse Lane used for the basis of assessment for the access route from the B1029.

595000 600000 605000 610000 615000 620000

235000 230000 225000 220000 215000

N

LEGEND

- Onshore Order Limits
- Offshore Order Limits
- Onshore Export Cable Corridor Section Division
- Onshore Export Cable Corridor
- Substation Operational Boundary
- North Falls Indicative Substation Operational Boundary
- Landfall Compound Zone
- National Grid EACN Substation Zone

Construction Access Route

- Core Access Route
- Local Access Route to Temporary Construction Compound - All Vehicles
- Local Access Route Car/LGV Only (Assessed Route in the Study Area)

Traffic Count Location

- Existing Data – Department for Transport (DfT) Road Traffic Data Website (2022)
- Existing Data – Department for Transport (DfT) Road Traffic Data Website (2019)
- New Data - WebTRIS (2019, 2022, and 2023)
- New Data - Automatic Traffic Count (ATC) (2022)
- New Data - Junction Turning Count (2022)
- No Baseline Data Available

Note.
Baseline Data at Link 35 Used for the Assessment.

0 1 2 4
Kilometres

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Traffic Count Location data retrieved through the Department of Transport (DfT) Road Traffic Data Website (2019).

PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

DRAWING TITLE:
BASELINE TRAFFIC DATA LOCATIONS (CONSTRUCTION ACCESS ROUTES)

VER	DATE	REMARKS	Drawn	Checked
1	07/03/2024	ES Submission	DB	JRS

DRAWING NUMBER: 8.4

SCALE:	PLOT SIZE:	DATUM:	PROJECTION:
1:90,000	A3	OSGB 1936	British National Grid

FIVE ESTUARIES
OFFSHORE WIND FARM

8.7.21 The Trip End Model Presentation Program (TEMPRO version 7.3c) database, which determines background traffic growth on an annual basis for a specified time period, has been used to factor the 2019 DfT and Webtris data on the A12 and A120 to a base year of 2022.

8.7.22 Traffic growth rates have been applied to the observed traffic flows in Table 8.11 using the DfT software TEMPRO to create base 2022 traffic flows. The highway links where 2023 data has been used (highway links 4,7, 14 and 15, where 2022 data or a recent date avoiding the covid-19 pandemic were not available) have been factored back to 2022 using TEMPRO.

8.7.23 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.

8.7.24 The TEMPRO factors (2019 to 2022):

- A12/A120 – 1.04

8.7.25 The TEMPRO factors (2023 to 2022):

- A120 – 1.025.

8.7.26 The 2022 year AADT flows for the DfT and Webtris data are shown in Table 8.11 and the 2022 year AADT flows for all highway links in the study area are shown in Figure 8.9 and Figure 8.10.

Table 8.11: Highway links AADT (DfT/Webtris data – 2022 base year)

Link ID	Location	AADT		HGV (%)
		Total vehicles	HGVs	
1	A12 (N)	63,555	6,023	9.5
2	A12 (S)	73,980	6,158	8.3
6	A12 (N) off-slip at J29 Roundabout	9,485	793	8.4
7	A12 (N) on-slip at J29 Roundabout	9,170	1,112	12.1
10	A120 between J29 and A133	48,033	2,913	6.1
11	A120 (A133 to Harwich Road)	13,287	1,521	11.4
12	A120 (Harwich Road to Bentley Road)	13,457	1,623	12.1
13	A120 (Bentley Road to B1035)	13,626	1,726	12.7
14	A120 (East of B1035)	15,351	1,827	11.9
15	A120 at Harwich	10,495	1,667	15.9
16	A133 (A120 to A133 Main Road)	23,644	747	3.2
17	A133 (A133 Main Road to B1033)	33,338	1,230	3.7

Link ID	Location	AADT Total vehicles	HGVs	HGV (%)
18	A133 (B1033 to B1027)	22,299	591	2.7
19	A133 Clacton Road (Elmstead Market)	10,218	243	2.4
20	A133 Main Road	12,817	641	5.0
21	B1027 St John's Road (west of Clacton)	16,492	148	0.9
22	B1027 Colchester Road (St Osyth Park)	11,894	168	1.4

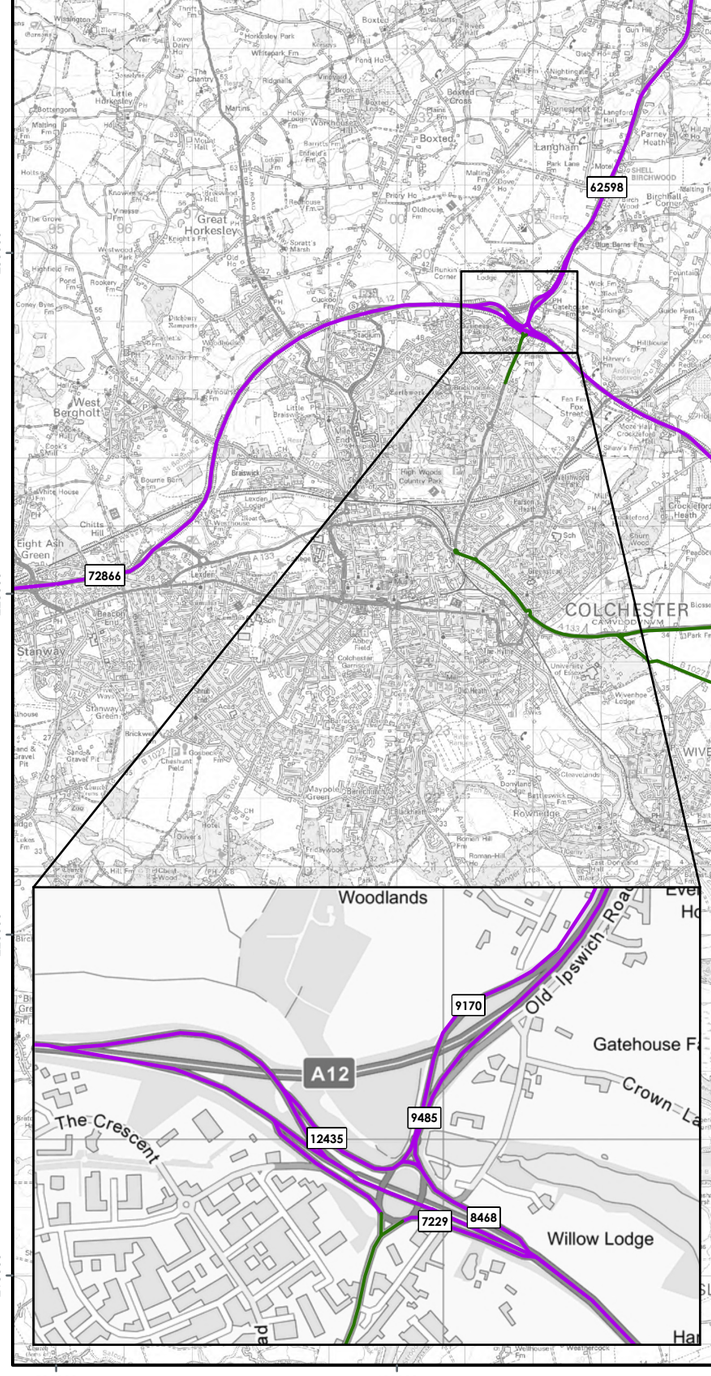
595000 600000 605000 610000 615000 620000 625000

235000 230000 225000 220000 215000

N

Section 7
Section 6
Section 5
Section 4B
Section 4A
Section 3
Section 2
Section 1

62598 72866 46049 9705 12738 12901 22459 12174 31666 14046 11297 15665 13617 7079 6798 21181 5584 9415 5214 11511 15351 10495 401 2100 887 7869 13063 5245 2133 1478 9170 9485 12435 7229 8468



LEGEND

- Onshore Order Limits
- Offshore Order Limits
- Onshore Export Cable Corridor Section Division
- Onshore Export Cable Corridor
- Substation Operational Boundary
- North Falls Indicative Substation Operational Boundary
- Landfall Compound Zone
- National Grid EACN Substation Zone

Construction Access Route

- Core Access Route
- Local Access Route to Temporary Construction Compound - All Vehicles
- Local Access Route Car/LGV Only (Assessed Route in the Study Area)
- XX 2-Way Link Flow

0 1 2 4
Kilometres

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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

DRAWING TITLE:
BASELINE AVERAGE DAILY TWO-WAY TRAFFIC FLOWS 2022 (TOTAL TRAFFIC)

VER	DATE	REMARKS	Drawn	Checked
1	07/03/2024	ES Submission	DB	JRS

DRAWING NUMBER: 8.5

SCALE:	PLOT SIZE:	DATUM:	PROJECTION:
1:90,000	A3	OSGB 1936	British National Grid

FIVE ESTUARIES
OFFSHORE WIND FARM

595000 600000 605000 610000 615000 620000 625000

235000 230000 225000 220000 215000

N

Section 7
Section 6
Section 5
Section 4B
Section 4A
Section 3
Section 2
Section 1

5932 6065 2792 1667 1827 1556 1458 1655 1168 609 710 231 1112 793 1219 686 836 1527 1556 1458 1168 609 710 231 1112 793 1219 686 836 12 47 28 193 129 49 41 290 230 211 113 143 562 160 140 212 137 119

Woodlands
Old Ipswich Road
A12
Gatehouse F
Crown La
The Crescent
Willow Lodge

COLCHESTER
BRIGHTLINGSEA
CLACTON-ON-SEA
Holland-on-Sea
Harwich International Port
VEHICLE FERRY FROM HARWICH INTERNATIONAL PORT TO Hook of Holland 7 hours

LEGEND

- Onshore Order Limits
- Offshore Order Limits
- Onshore Export Cable Corridor Section Division
- Onshore Export Cable Corridor
- Substation Operational Boundary
- North Falls Indicative Substation Operational Boundary
- Landfall Compound Zone
- National Grid EACN Substation Zone

Construction Access Route

- Core Access Route
- Local Access Route to Temporary Construction Compound - All Vehicles
- Local Access Route Car/LGV Only (Assessed Route in the Study Area)
- XX 2-Way Link Flow

0 1 2 4
Kilometres

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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

DRAWING TITLE:
BASELINE AVERAGE DAILY TWO-WAY TRAFFIC FLOWS 2022 (HGVs)

VER	DATE	REMARKS	Drawn	Checked
1	07/03/2024	ES Submission	DB	JRS

DRAWING NUMBER: 8.6

SCALE:	PLOT SIZE:	DATUM:	PROJECTION:
1:90,000	A3	OSGB 1936	British National Grid

FIVE ESTUARIES
OFFSHORE WIND FARM

ROAD SAFETY

8.7.27 To understand the potential for a significant road safety impact as a result of the construction phase of VE, it is necessary to establish a baseline and identify any inherent road safety issues within the onshore Traffic and Transport study area.

8.7.28 The review, which is provided in detail in Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2 is summarised in the following sections and includes:

- Examining the rate of PIAs per length of road in miles compared to the Great Britain (GB) PIA rate; and
- Reviewing any clusters to understand any patterns or trends, especially those involving HGVs and vulnerable road users (namely cyclists and pedestrians).

LOCAL ROAD NETWORK

8.7.29 An analysis of the PIA data on the LRN in the study area (core and local construction vehicle access routes that would be used by both HGVs and cars/LGVs) has been undertaken, informed by data for a period of seven years (1 July 2015 and 30 June 2022) obtained from Essex County Council.

8.7.30 The analysis of PIA rates concluded that the following links have a significantly higher rate than the 2022 GB rate, per billion vehicle km[10] (425.5):

- Bentley Road;
- B1027 St. Johns Road/Valley Road (west of the Great Eastern Mainline Spur);
- B1441 Weeley Bypass/Clacton Road/Weeley Road; and
- B1414 Harwich Road/Station Road.

8.7.31 The analysis concluded that the following links have a marginally higher accident rate than the 2019 GB rate:

- B1027 Valley Road (east of the Great Eastern Mainline Spur); and
- B1032 Frinton Road.

8.7.32 The other highway links within the study area all have a PIA rate similar to, or less than, the 2022 GB rate:

8.7.33 PIA clusters (defined for the purposes of the assessment as three or more PIAs in the same location) have been identified on the B1027 St. John's Road/Valley Road, which had some common causation factors, associated with driver error, but no indication of deficiencies in the geometry of the junctions. No PIAs at the clusters involved HGVs and only one PIA involved a non-motorised user (a cyclist).

8.7.34 Given the above, it is not considered there to be an issue of road safety on the proposed access roads that vehicle movements associated with VE would exacerbate.

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

STRATEGIC ROAD NETWORK (SRN)

8.7.35 An analysis of the PIA data on the SRN, informed by data for a period of seven years (1 January 2015 to 31 December 2022) obtained from Crashmap. Crashmap is based on official accident data reported by the Police and is approved by the National Statistics Authority and reported on by the DfT each year has been undertaken.

8.7.36 The analysis identified 70 PIAs within the assessment period between (and including) the A12 Junction 29 and the A120/A133 interchange and 16 PIAs between the A120/A133 interchange and the A120/B1035 junction. The calculated PIA rate for both sections is significantly lower than the 2019 GB rate.

8.7.37 There is a higher proportion of HGV PIAs (30%) compared to the AADT HGV percentage (between 6% and 13%) on the A120; however, following an analysis of the timing of the PIAs, only two (7.6%) occurred in the summer months when traffic flows on the A120 are between 3.5% and 10% higher, which would suggest there is no correlation between the increase in traffic flows on the A120 and the number of PIAs. In fact, the majority of all PIAs in the assessment period on the A120 occurred when traffic flows are lower.

8.7.38 A summary of the PIA clusters on the A120 between the A12 and the A120/A133 interchange is as follows:

- There is a large cluster of PIAs at the circulating carriageway in the vicinity of the A12 south off-slip /A12 north on/off slip; and
- There are no clusters on the A120 mainline.

8.7.39 A summary of the PIA clusters on the A120 to the east of the A133 is as follows:

- There have been six PIAs at the A120/Harwich Road roundabout, with a cluster of five; however, these were all prior to the roundabout being constructed;
- There have been four PIAs at the A120/B1035 roundabout, all slight in severity and at different locations;
- There have been four PIAs at the A120/Bentley Road and A120/Little Bromley Road junctions; with three of these prior to these becoming left-in/left-out junctions and the gap in the central reservation blocked; and
- There have been six other PIAs at other sections between the A120/Harwich Road and A120/B1035 roundabouts; five slight in severity, one serious in severity and all at different locations.

PUBLIC RIGHTS OF WAY

8.7.40 The PRoW within the study area (those that would be impacted directly) are described in Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2. A summary of the PRoW is provided in Table 8.12 and illustrated in Figure 8.11.

Table 8.12: PRoW by Onshore ECC route section

PRoW	Onshore ECC Route Section	Baseline assessment
FP29 167	1	England Coast path, very well used, particularly in the summer months. Would be crossed by vehicles accessing the beach. (The offshore export cable would be installed under the path using HDD /trenchless technique)
FP3 164	1	Uses the track to be used for operation and maintenance
BR2 164	1	Uses the track to be used for operation and maintenance
FP1 164	1	Uses the track to be used for operation and maintenance
FP5 164	1	Uses the track to be used for operation and maintenance
FP10 164	1	
FP6 164	1	Edge of the Onshore ECC
FP38 164	1	Would be crossed by off-route haul road
FP11 164	1	Would be crossed by the cable trenches/haul road/off-route haul road
FP3 180	3	Would be crossed by cable trenches/haul road
FP7 180	3	Would be crossed by an off-route haul road at CR-5. Crosses the track to be used for operation and maintenance.
FP4 180	3	Would be crossed by off-route haul road
FP3 180	3	Would be crossed by off-route haul road
FP1 180	3	Would be crossed by cable trenches/haul road
FP18 159	3	Could be crossed by cable trenches/haul road
FP18 180	3	Could be crossed by cable trenches/haul road. Would be through TCC4
FP8 179	4b	Would be crossed by off-route haul road/track to be used for operation and maintenance/cable trenches/haul road
FP22 179	4b	Would be crossed by off-route haul road/track to be used for operation and maintenance
FP3 179	4b	Would be crossed by the cable trenches/haul road
FP1 179	4b	Would be crossed by the cable trenches/haul road/ track to be used for operation and maintenance
FP31 183	4b	Would be crossed by the cable trenches/haul road
FP32 183	4b	Would be crossed by the cable trenches/haul road
FP37 183	4b	Shared with AC-6

PRoW	Onshore ECC Route Section	Baseline assessment
FP15 183	4b	Would be crossed by off-route haul road
FP17 172	6	Would be crossed by cable trenches/haul road and OnSS access road
FP16 172	6	
FP15 172	6	Could be through OnSS Works Zone

620000 621000 622000 623000 624000

219000 220000 218000 217000

Section 1

FRINTON ON-SEA

N

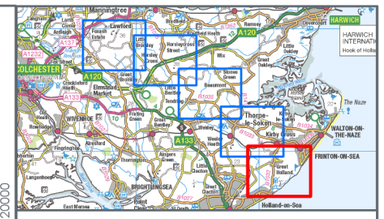
FP 10 164 FP 11 164 FP 38 164 FP 7 164 FP 6 164 FP 1 164 FP 5 164 FP 3 164 FP 41 164 FP 29 167

BR 2 164

TCC1 TCC2 Beach Works TCC

Great Holland Holland-on-Sea Holland Haven Frinton Golf Course

Holland Brook Kirby Brook Picker's Ditch



LEGEND

- Onshore Order Limits
- Offshore Order Limits
- Onshore Export Cable Corridor Section Division
- Onshore Export Cable Corridor
- Temporary Beach Access Zone
- Temporary Construction Compound
- Off Route Haul Road
- Access and Crossing Zone
- Landfall Compound Zone
- Indicative Landfall Compound

Public Right of Way

- Footpath
- Bridleway

0 125 250 500

Metres

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PROJECT TITLE:

FIVE ESTUARIES OFFSHORE WINDFARM

DRAWING TITLE:

PUBLIC RIGHTS OF WAY

VER	DATE	REMARKS	Drawn	Checked
1	16/02/2024	ES Submission	DB	JRS

DRAWING NUMBER: 8.7

Sheet No: 1 of 5

SCALE:	PLOT SIZE:	DATUM:	PROJECTION:
1:15,000	A3	OSGB 1936	British National Grid

FIVE ESTUARIES OFFSHORE WIND FARM

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223000 222000 221000 220000

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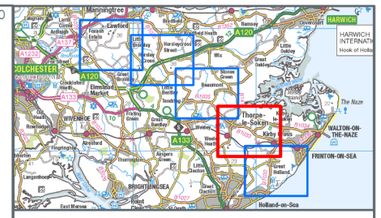

LEGEND

- Onshore Order Limits
- Onshore Export Cable Corridor Section Division
- Onshore Export Cable Corridor
- Temporary Construction Compound
- Off Route Haul Road
- Access and Crossing Zone

Public Right of Way

- Footpath
- Bridleway

0 125 250 500

Metres

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1	16/02/2024	ES Submission	DB	JRS

DRAWING NUMBER: 8.7

Sheet No: 2 of 5

SCALE:	PLOT SIZE:	DATUM:	PROJECTION:
1:15,000	A3	OSGB 1936	British National Grid

FIVE ESTUARIES OFFSHORE WIND FARM

614000 615000 616000 617000 618000

226000 225000 224000 223000

N

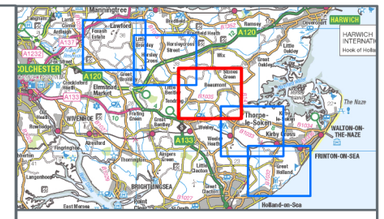
Section 4b
Section 4a
Section 3
Section 4a

TCC5
TCC4

FP 31 183
FP 1 179
FP 3 179
FP 8 179
FP 22 179
FP 18 159
FP 18 180
FP 1 180
FP 3 180
FP 4 180
FP 7 180

Tendring Hea
Tendring Green
Goose Green
Tendring
Stones Green
Oak Corner
Beaumont
Thorpe Green
Far Thorpe Green
Weeley

Oakview Manor
The Stables
Old Hall Farm
Meadow View Cottage
Grange Farm
Glebe Farm
Middlefield House
Sewage Pmg Sta
Kettlethorpe
Woodfield Farm
Pilcox Wood
Clare House
Romford House
Nearby
Church Farm
Oakley House
Old School House
Tanzara
Walnut House
Watercress Bed
Oakley House
Queach Grove
Wolves Hall Farm
Wind Turbines
Higher Barn Farm
Stonehall Wood
Tendring Lodge
Tendring Grove
Allot Gdns
The Hollies
Hannam's Hall
Wayside Cottage
Brookside Cottage
Yewtree Farm
Simon's Wood
Mill House
Hollywood Farm
New Hall Farm
Hill Farm
Cricket Ground
Lodge House
The Plantation
The Rookery
The Spinney
The Manor House Lodge
Hieland House
Home Wood
Hillhouse Farm
Hillands Wood
Skirr Cottage
Bretts Hall Cottages
Bretts Hall Lodge
Pestles Hall
Hawk Farm
Rose Farm
Homestead Lake Country Park
Homestead Lake Park
Raptor Rise
Kirby Hall
Kirby Cross
Frinton Golf Club
Kiltigrove Wood
Five Houses
Cressbrook
The Compasses
Broadmeadow Wood
Ratcliffs Farm Camp Site
Glebe Wood
Oldhouse Farm
Oak Farm House
Oak Farm
Oak Corner
Oak Corner Cottage
White House
The Red House
The Plantation
Sewage Works
Lucas Farm
Maple Cottage
Elm Farm
Northfield Farm
Newlands
Beaumont Hall
Playing Field
Pond Farm
Brick Layers Cottage
Wind Turbines
Barker's Farm
Barker's Cottages
Barker's Hall
Bradley Hall Farm
White House
Oakwood House
Buxerdene House
Cyprus Cottage
Longshots Meadow
Valley Farm
Greenacres
Greyfriars
Scenehella Farm
Whitehall Farm Sewage Works
Whitehall Bungalow
Greek Farm
Thorpe Green Farm
Comarques Farm House
Comarques Cottage
Edenerie House
Frambla Barn
Mill House



LEGEND

- Onshore Order Limits
- Onshore Export Cable Corridor Section Division
- Onshore Export Cable Corridor
- Temporary Construction Compound
- Off Route Haul Road
- Access and Crossing Zone

Public Right of Way

- Footpath
- Bridleway

0 125 250 500
Metres

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FIVE ESTUARIES OFFSHORE WINDFARM

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PUBLIC RIGHTS OF WAY

VER	DATE	REMARKS	Drawn	Checked
1	16/02/2024	ES Submission	DB	JRS

DRAWING NUMBER: 8.7

Sheet No: 3 of 5

SCALE:	PLOT SIZE:	DATUM:	PROJECTION:
1:15,000	A3	OSGB 1936	British National Grid

FIVE ESTUARIES
OFFSHORE WIND FARM

610000 611000 612000 613000 614000

229000 228000 227000 226000

N

TCC6 TCC7 TCC8 TCC9 TCC10 TCC11

Section 5 Section 6 Section 5 Section 4b

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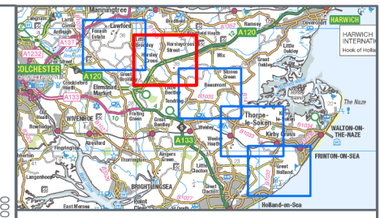
Horseleycross Street Horsley Cross Goose Green Little Bentley Mill Green Tendring Heath Tendring Green



LEGEND

- Onshore Order Limits
- Onshore Export Cable Corridor Section Division
- Onshore Export Cable Corridor
- Substation Temporary Construction Haul Road
- Temporary Construction Compound
- Off Route Haul Road
- Access and Crossing Zone

Public Right of Way

- Footpath
- Bridleway

0 125 250 500

Metres

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FIVE ESTUARIES OFFSHORE WINDFARM

DRAWING TITLE:

PUBLIC RIGHTS OF WAY

VER	DATE	REMARKS	Drawn	Checked
1	16/02/2024	ES Submission	DB	JRS

DRAWING NUMBER: 8.7

Sheet No: 4 of 5

SCALE:	PLOT SIZE:	DATUM:	PROJECTION:
1:15,000	A3	OSGB 1936	British National Grid

FIVE ESTUARIES OFFSHORE WIND FARM

606000 607000 608000 609000 610000

230000 229000 228000 227000

N

Section 7
Section 6
Section 5
Section 4

FP 15 172
FP 16 172
FP 17 172

TCC10
TCC9
TCC11

Foxash Estate
Burnt Heath
Bromley Cross
Little Bromley

LEGEND

- Onshore Order Limits
- Onshore Export Cable Corridor Section Division
- Onshore Export Cable Corridor
- Substation Operational Boundary
- Substation Temporary Construction Compound
- Ardleigh Road Drainage Zone
- Indicative Substation Access Route
- Substation Temporary Construction Haul Road
- North Falls Indicative Substation Operational Boundary
- Temporary Construction Compound
- Access and Crossing Zone
- National Grid EACN Substation Zone

Public Right of Way

- Footpath
- Bridleway
- Byway

0 125 250 500
Metres

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FIVE ESTUARIES OFFSHORE WINDFARM

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VER	DATE	REMARKS	Drawn	Checked
1	16/02/2024	ES Submission	DB	JRS

DRAWING NUMBER: 8.7

Sheet No: 5 of 5

SCALE:	PLOT SIZE:	DATUM:	PROJECTION:
1:15,000	A3	OSGB 1936	British National Grid

FIVE ESTUARIES
OFFSHORE WIND FARM

SENSITIVE RECEPTORS

HIGHWAY LINKS (INCREASE IN TRAFFIC)

8.7.41 Using the review of the construction access routes in Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2, Table 8.13 identifies the sensitivity of each highway link to changes in the volume of traffic, based on the criteria in Table 8.6 and professional judgement.

Table 8.13: Highway link sensitivity (increase in traffic)

Link ID[11]	Highway link	Review of link sensitivity	Sensitivity
1,2,7	A12	SRN, with low sensitivity to traffic flows, no relevant clusters of accidents identified	Negligible
8 to 15	A120		
16 to 18	A133	Core route for access in the study area with some sensitivity to traffic flow	Low
19/20	A133 Clacton Road/Main Road	Main distributor road with some frontage development	Low
21/22	B1027 St John's Road/Colchester Road	Main distributor road with some frontage development	Low
23	B1027 Valley Road	Shopping area with roadside frontage and PIA clusters identified, Clacton Ambulance Station	High
24	B1032 Frinton Road	Shopping area with roadside frontage, part of a promoted cycle route	High
25	B1032 Clacton Road	Access route to open space /tourist facilities with some sensitivity to traffic flow	Low
26	B1033 Colchester Road (west of B1441)	Congestion	Medium
27	B1441 Clacton Road	Schools at Weeley, Weeley Fire Station, part of a promoted cycle route	High
28	B1414 Harwich Road	Residential, passes through edge of Thorpe-le-Soken	Medium
29	B1033 Abbey Street/Frinton Road/Thorpe Road	Edge of Thorpe-le-Soken, playground	High

[11] Highway links 34 to 43 not included as they are screened out of the formal assessment in Section 8.10.

Link ID[11]	Highway link	Review of link sensitivity	Sensitivity
30	B1033 Colchester Road (east of B1441)	Weeley Ambulance Station, new school proposed, part of a promoted cycle route	High
31	B1035 Tendring Road	Residential properties with no footways	Medium
32	B1035 Thorpe Road	Few receptors along the route	Low
33	B1035 (south of A120)	No receptors between A120 and construction access	Negligible
34	B1035 Clacton Road	Several properties, set back from the carriageway	Low
35	Bentley Road (south of construction accesses)	Priority 2 route in the Essex Functional Route Hierarchy. Performs an essential traffic management distributary function between the local highway network and the A120. Six properties, five set back from the carriageway, one adjacent to the carriageway	Low
36	Bentley Road/Shop Road/Bromley Road (north of construction accesses)	Priority 2 route in the Essex Functional Route Hierarchy. Performs an essential traffic management distributary function between the local highway network and the A120. Passes through Little Bromley	Low – increase in cars/LGVs Medium – increase in HGVs
44	B1029 (north of Harwich Road)	Key route between Brightlingsea and the A12 J30. Passes through the settlement of Great Bromley, where there is a primary school	Medium
45	Waterhouse Lane	Minor road, single track in places, dwellings close to the carriageway	High

HIGHWAY LINKS (ROAD CLOSURE)

8.7.42 Using the review of the highway network in Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2, the sensitivity of each highway link to a temporary road closure based on the criteria in Table 8.6 and professional judgement is summarised in Table 8.14.

Table 8.14: Highway link sensitivity (temporary road closure)

Link ID	Highway link	Review of link sensitivity	Sensitivity
31	Damant's Farm Lane	Very low use, convenient alternative available	Low
39	Payne's Lane		
41	Barlon Road		

PUBLIC RIGHTS OF WAY (PROW)

8.7.43 Using the review of the PRoW in Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2, Table 8.15 identifies the sensitivity of each PRoW, based on the criteria in Table 8.6 and professional judgement.

Table 8.15: PRoW sensitivity

PRoW	Onshore ECC route section	Review of link sensitivity	Sensitivity
FP29 167	1	Part of proposed England Coast path, well used	Very High
FP3 164	1	Connects to proposed England Coast Path	High
BR2 164	1		
FP5 164	1	Connects Holland Haven to nature reserve	High
FP5 164	1	Recreational routes close to communities	Medium
FP10 164	1		
FP6 164	1		
FP38 164	1		
FP11 164	1		
FP3 180	3		
FP7 180	3		
FP4 180	3		
FP3 180	3		
FP1 180	3		
FP18 159	3		
FP18 180	3		

PRoW	Onshore ECC route section	Review of link sensitivity	Sensitivity
FP8 179	4b		
FP22 179	4b	Further from communities, several very overgrown routes, but likely to be used for leisure walks in summer months.	Medium
FP3 179	4b		
FP1 179	4b		
FP31 183	4b		
FP32 183	4b		
FP37 183	4b		
FP15 183	4b		
FP15 172	6	Further from communities, likely to be used for leisure walks in summer months.	Medium
FP16 172	6		
FP17 172	6		

EVOLUTION OF THE BASELINE

BACKGROUND TRAFFIC GROWTH

8.7.44 The future baseline position assumes year on year background traffic growth from the base year of 2022. As a result, the baseline AADT traffic flows on construction highway links that form the construction access routes for VE) (Table 8.10 and Table 8.11) have been increased (using TEMPRO) to account for the future year scenario of 2027 (the estimated first year of construction of VE), as shown in Table 8.16 and in Figure 8.17 and Figure 8.18.

8.7.45 The TEMPRO factor (2022 to 2027)

- SRN – 1.07; and
- LRN – 1.0665.

Table 8.16: Highway link (construction access routes) AADT (2027)

Link ID	Location	ADT /AADT (2027)		HGV (%)
		Total vehicles	HGVs	
1	A12 (N)	66,979	6,347	9.5
2	A12 (S)	77,966	6,490	8.3
6	A12 (N) off-slip at J29 Roundabout	10,149	849	8.4
7	A12 (N) on-slip at J29 Roundabout	9,812	1,190	12.1
8	A120 (E) off-slip at J29 Roundabout	7,735	734	9.5
9	A120 (E) on-slip at J29 Roundabout	9,061	895	9.9
10	A120 (J29 to A133)	49,273	2,988	6.1
11	A120 (A133 to Harwich Road)	13,630	1,560	11.4
12	A120 (Harwich Road to Bentley Road)	13,804	1,665	12.1

Link ID	Location	ADT /AADT (2027)		HGV (%)
		Total vehicles	HGVs	
13	A120 (Bentley Road to B1035)	13,978	1,770	12.7
14	A120 (East of B1035)	16,426	1,955	11.9
15	A120 at Harwich	11,230	1,784	15.9
16	A133 (A120 to A133 Main Road)	23,952	757	3.2
17	A133 (A133 Main Road to B1033)	33,772	1,246	3.7
18	A133 between B1033 and B1027	22,589	599	2.7
19	A133 Clacton Road (Elmstead Market)	10,351	246	2.4
20	A133 Main Road	12,984	649	5.0
21	B1027 St John's Road (west of Clacton)	16,707	149	0.9
22	B1027 Colchester Road (St Osyth Park)	12,049	170	1.4
23	B1027 Valley Road (Clacton)	14,523	226	1.6
24	B1032 Frinton Road	7,550	146	1.9
25	B1032 Clacton Road	7,251	127	1.7
26	B1033 Colchester Road (west of B1441)	14,980	309	2.1
27	B1441 Clacton Road	5,955	153	2.6
28	B1414 Harwich Road	5,561	120	2.2
29	B1033 Frinton Road	12,277	225	1.8
30	B1033 Colchester Road (east of B1441)	10,041	245	2.4
31	B1035 Tendring Road	1,576	43	2.8
32	B1035 Thorpe Road	2,275	52	2.3
33	B1035 south of A120	5,594	138	2.5
34	B1035 Clacton Road	8,393	206	2.5
35	Bentley Road	946	30	3.2
44	B1029 (north of Harwich Road)	2,240	50	2.2
45	Waterhouse Lane	428	13	3.0

595000 600000 605000 610000 615000 620000 625000

235000 230000 225000 220000 215000

N

66979
77966
49273
10351
2240
428
946
13804
13630
23952
12984
33772
14980
12049
22589
16707
16426
11230
8393
13978
5594
2275
1576
10041
12277
5561
5955
14523
7251
7550

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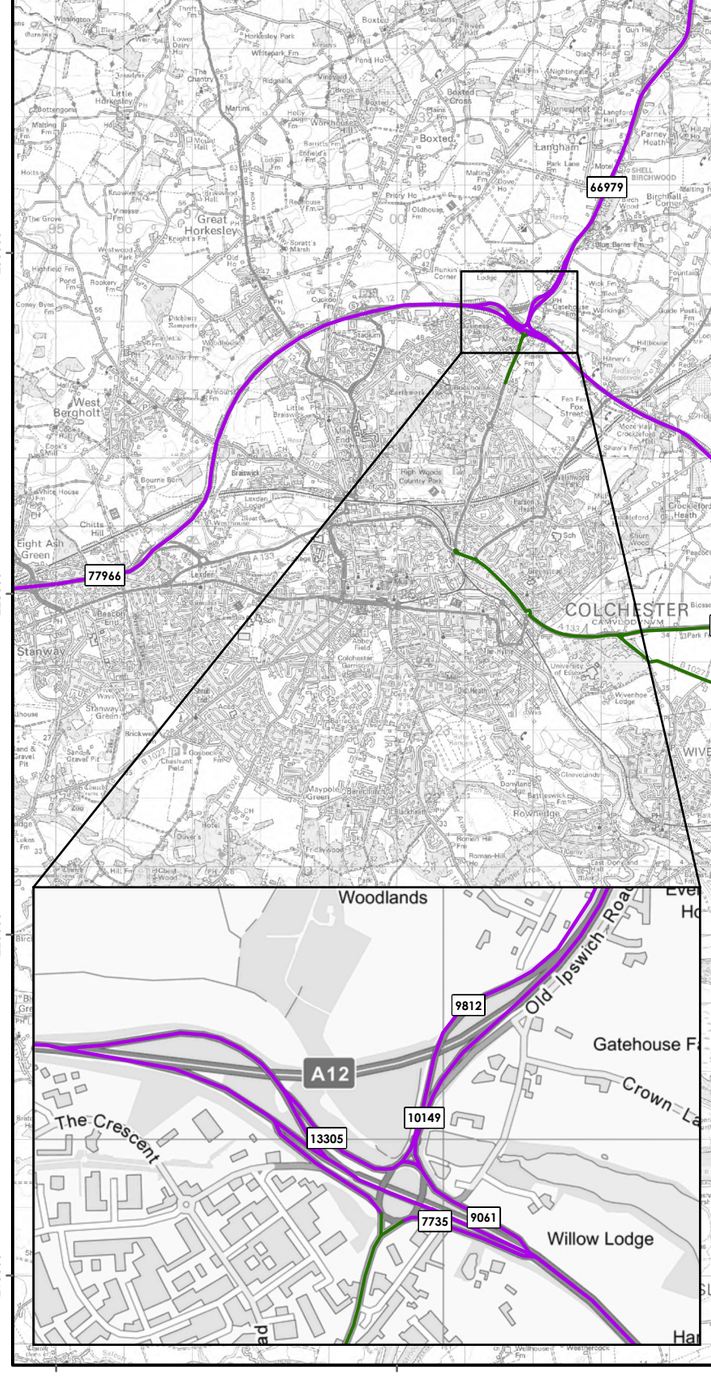
COLCHESTER
BRIGHTLINGSEA
CLACTON-ON-SEA
TENDRING DISTRICT
WIVENHOE
Holbrook Bay
Stutton Ness
Copperas Bay
Harwich International Port
VEHICLE FERRY FROM HARWICH INTERNATIONAL PORT TO Hook of Holland 7 hours



LEGEND

- Onshore Order Limits
- Offshore Order Limits
- Onshore Export Cable Corridor Section Division
- Onshore Export Cable Corridor
- Substation Operational Boundary
- North Falls Indicative Substation Operational Boundary
- Landfall Compound Zone
- National Grid EACN Substation Zone

Construction Access Route

- Core Access Route
- Local Access Route to Temporary Construction Compound - All Vehicles
- Local Access Route Car/LGV Only (Assessed Route in the Study Area)
- XX 2-Way Link Flow

0 1 2 4
Kilometres

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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

DRAWING TITLE:
BASELINE AVERAGE DAILY TWO-WAY TRAFFIC FLOWS 2027 (TOTAL TRAFFIC)

VER	DATE	REMARKS	Drawn	Checked
1	07/03/2024	ES Submission	DB	JRS

DRAWING NUMBER: 8.8

SCALE:	PLOT SIZE:	DATUM:	PROJECTION:
1:90,000	A3	OSGB 1936	British National Grid

FIVE ESTUARIES
OFFSHORE WIND FARM

595000 600000 605000 610000 615000 620000 625000

235000 230000 225000 220000 215000

N

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6347 6490 2988 1784 1955 1665 1560 1770 1246 757 649 246 1190 1304 849 734 895 206 138 30 50 13 52 43 309 245 225 120 153 599 170 149 226 146 127

COLCHESTER
CLACTON-ON-SEA
BRIGHTLINGSEA
TENDRING DISTRICT
Woodlands
Willow Lodge
A12
The Crescent
Old Ipswich Road

LEGEND

- Onshore Order Limits
- Offshore Order Limits
- Onshore Export Cable Corridor Section Division
- Onshore Export Cable Corridor
- Substation Operational Boundary
- North Falls Indicative Substation Operational Boundary
- Landfall Compound Zone
- National Grid EACN Substation Zone

Construction Access Route

- Core Access Route
- Local Access Route to Temporary Construction Compound - All Vehicles
- Local Access Route Car/LGV Only (Assessed Route in the Study Area)
- XX 2-Way Link Flow

0 1 2 4
Kilometres

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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

DRAWING TITLE:
BASELINE AVERAGE DAILY TRAFFIC FLOWS 2027 (HGVs)

VER	DATE	REMARKS	Drawn	Checked
1	07/03/2024	ES Submission	DB	JRS

DRAWING NUMBER: 8.9

SCALE:	PLOT SIZE:	DATUM:	PROJECTION:
1:90,000	A3	OSGB 1936	British National Grid

FIVE ESTUARIES OFFSHORE WIND FARM

8.8 KEY PARAMETERS FOR ASSESSMENT

8.8.1 The trip generation and distribution parameters are described in detail in Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2 and the associated appendices and summarised in Paragraph 8.8.2 below.

TRIP GENERATION PARAMETERS

8.8.2 The key trip generation parameters are:

- Core working hours – 07:00 to 19:00 (some activities, such as HDD (or another trenchless crossing techniques) may require continuous 24 hours working for short periods);
- The construction workforce would arrive and depart in cars and LGVs;
- 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 period identified on the highway network.
- Core HGV deliveries - 07:00 to 19:00;
- The two-way HGV movements assumes a vehicle arriving at a construction access and TCC, uploading and departing at the same access;
- The HGV movements along each of the haul roads is not known and is not specifically assessed as part of Volume 6, Part 3, Chapter 9: Airborne Noise and Vibration for the assessment of receptors along the haul roads, it has assumed that all HGVs arriving would also use the haul roads;
- Car occupancy – 1.5 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 share travel costs; and
- The two-way employee movements assume a vehicle arriving at a construction access and TCC in the morning and leaving in the evening, as per the assumptions above.

TRIP DISTRIBUTION PARAMETERS

HGVS

8.8.3 In the PEIR for VE, it was assumed that 100% of HGVs would arrive from and depart to the A12 J29 given the locations HGVs could arrive from or depart to the A120 east would be limited. However following Section 42 comments from NH, a sensitivity test has been undertaken to consider the maximum (however unlikely) impact on the A120 for HGVs arriving from the A12 J29 or the A120 (east of the B1035 Horsely Cross roundabout).

WORKFORCE

8.8.4 In the PEIR for VE, it was assumed that 100% of the workforce would arrive from and depart to the A12 J29, for a robust assessment on the SRN and the A133 as the key route on the LRN in the study area. This approach was different to the NF OWF assessment at PEIR, which was a gravity model based on journey to work data of employees in the construction sector and the availability of local accommodation.

8.8.5 Following discussions with Essex County Council and NH at ETG meetings it was agreed that the workforce distribution should be based on journey to work data from the 2011 Census. A number of discussions and meetings with Essex County Council were undertaken to agree the final distribution. At the ETG meeting on 5 September 2023, AECOM (consultants on behalf of NH) stated it would defer to Essex County Council in the workforce distribution and therefore it has been agreed with both stakeholders.

8.8.6 The resulting workforce trip distribution, which was adjusted to take account of likely low proportions from Colchester and Ipswich identified by Essex County Council, represents a very robust assessment due to the total of 119.5%, is shown in Table 8.17.

Table 8.17: Workforce trip distribution

Origin	Distribution (%)
A12 North	18.9
A12 South	9.4
Colchester	24.5
Colchester via A12/A120	8.8
A120 East of A133/Manningtree	19.5
Tendring via A120 (north of A133)	4.1
B1027 corridor south of Colchester	8.3
Clacton	13.8
Frinton/Walton on the Naze	6.6
Thrope-Le-Soken and surrounding areas	5.6
Total	**119.5**

8.8.7 Given the location of the likely main local accommodation centres (Clacton, Colchester, Chelmsford and Ipswich) and the limited route choice on the LRN within the study area, to access the Onshore ECC and OnSS TCCs, it is likely that even if other highway links and routes were used by construction workers from other accommodation locations, these would be minor and represent a negligible increase in total traffic; thus, not breaching the 10% or 30% threshold increases on those links and requiring assessment.

ASSESSMENT SCENARIOS

8.8.8 The assessment scenarios are:

- Scenario A: 100% HGVs from the A12 J29; and
- Scenario B: 100% HGVs from Harwich and via the A120 (east of the B1035 Horsley Cross roundabout).

MAXIMUM DESIGN SCENARIO

8.8.9 The MDS is summarised in Table 8.18.

Table 8.18: Maximum design scenario.

Potential effect	Maximum adverse scenario assessed	Justification
Construction		
All effects considered as set out in Paragraphs 8.4.1 to 8.4.47	The maximum number of total vehicles/HGVs expected at each construction access location and highway link (based on Assessment Scenario 1 or 2) as set out in: > Table 8.21, Table 8.22 and Figure 8.19 to Figure 8.21 (Peak hour); and > Table 8.25, Table 8.26 and Figure 8.22 to Figure 8.24 (Daily) 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 road closure.	The maximum forecast vehicle movements at each construction access will not occur simultaneously. The assessment does not consider 24-hour working (that may be required for HDD (or another trenchless technique) activities in exceptional circumstance, which would spread employee vehicle movements over a wider time period, although this would only involve construction worker movements associated with different shift times, not HGV movements. The assessment uses a conservative estimate of car sharing and does not take into account the implementation of measures within Volume 9, Report 26: Outline WTP The assessment includes a sensitivity test of a proportion of workforce vehicle movements (20%) in the morning and evening highway peak hours, which is most likely in the winter months due to the availability of daylight.
Decommissioning		
All effects considered	Assumed to be no worse than the construction phase	

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235000 230000 225000 220000 215000

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20 56 40 16 13 18 2 6 3 7 10 9

COLCHESTER
CLACTON-ON-SEA
BRIGHTLINGSEA
Holland-on-Sea
Harwich International Port
VEHICLE FERRY FROM HARWICH INTERNATIONAL PORT TO Hook of Holland 7 hours

Woodlands
Old Ipswich Road
A12
The Crescent
Willow Lodge
Gatehouse F
Crown La

LEGEND

- Onshore Order Limits
- Offshore Order Limits
- Onshore Export Cable Corridor Section Division
- Onshore Export Cable Corridor
- Substation Operational Boundary
- North Falls Indicative Substation Operational Boundary
- Landfall Compound Zone
- National Grid EACN Substation Zone

Construction Access Route

- Core Access Route
- Local Access Route to Temporary Construction Compound - All Vehicles
- Local Access Route Car/LGV Only (Assessed Route in the Study Area)
- XX 2-Way Link Flow

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Kilometres

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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

DRAWING TITLE:
PEAK HOUR FIVE ESTUARIES TWO-WAY TRAFFIC FLOWS (HGVs)

VER	DATE	REMARKS	Drawn	Checked
1	07/03/2024	ES Submission	DB	JRS

DRAWING NUMBER: 8.11

SCALE:	PLOT SIZE:	DATUM:	PROJECTION:
1:90,000	A3	OSGB 1936	British National Grid

FIVE ESTUARIES
OFFSHORE WIND FARM

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235000 230000 225000 220000 215000

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392 387 973 90 158 158 96 602 71 951 279 982 691 203 280 141 474 201 29 368 204 188 189 340 4 4 638 638 227 317 249 114 24 376 373 331 100 136 136 233 233

COLCHESTER
CLACTON-ON-SEA
BRIGHTLINGSEA
TENDRING DISTRICT
Woodlands
A12
Old Ipswich Road
Gatehouse F
Crown La
The Crescent
Willow Lodge
Holbrook Bay
Stutton Ness
Copperas Bay
Harwich International Port
VEHICLE FERRY FROM HARWICH INTERNATIONAL PORT TO Hook of Holland 7 hours

LEGEND

- Onshore Order Limits
- Offshore Order Limits
- Onshore Export Cable Corridor Section Division
- Onshore Export Cable Corridor
- Substation Operational Boundary
- North Falls Indicative Substation Operational Boundary
- Landfall Compound Zone
- National Grid EACN Substation Zone

Construction Access Route

- Core Access Route
- Local Access Route to Temporary Construction Compound - All Vehicles
- Local Access Route Car/LGV Only (Assessed Route in the Study Area)
- XX 2-Way Link Flow

0 1 2 4
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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

DRAWING TITLE:
PEAK MONTH FIVE ESTUARIES TWO-WAY DAILY TRAFFIC FLOWS (TOTAL TRAFFIC)

VER	DATE	REMARKS	Drawn	Checked
1	07/03/2024	ES Submission	DB	JRS

DRAWING NUMBER: 8.13

SCALE:	PLOT SIZE:	DATUM:	PROJECTION:
1:90,000	A3	OSGB 1936	British National Grid

FIVE ESTUARIES
OFFSHORE WIND FARM

595000 600000 605000 610000 615000 620000 625000

235000 230000 225000 220000 215000

N

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Section 1

241 676 482 194 214 29 72 39 83 159 77 108 60 85

Woodlands
Old Ipswich Road
A12
Gatehouse F
Crown La
The Crescent
Willow Lodge

COLCHESTER
BRIGHTLINGSEA
CLACTON-ON-SEA
FRINTON

VEHICLE FERRY FROM HARWICH INTERNATIONAL PORT TO Hook of Holland 7 hours

Harwich International Port

LEGEND

- Onshore Order Limits
- Offshore Order Limits
- Onshore Export Cable Corridor Section Division
- Onshore Export Cable Corridor
- Substation Operational Boundary
- North Falls Indicative Substation Operational Boundary
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Construction Access Route

- Core Access Route
- Local Access Route to Temporary Construction Compound - All Vehicles
- Local Access Route Car/LGV Only (Assessed Route in the Study Area)
- XX 2-Way Link Flow

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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

DRAWING TITLE:
PEAK MONTH FIVE ESTUARIES TWO-WAY DAILY TRAFFIC FLOWS (HGVs)

VER	DATE	REMARKS	Drawn	Checked
1	07/03/2024	ES Submission	DB	JRS

DRAWING NUMBER: 8.14

SCALE:	PLOT SIZE:	DATUM:	PROJECTION:
1:90,000	A3	OSGB 1936	British National Grid

FIVE ESTUARIES
OFFSHORE WIND FARM

595000 600000 605000 610000 615000 620000 625000

235000 230000 225000 220000 215000

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151 146 297 90 158 158 96 387 469 42 207 500 209 203 199 141 280 201 29 209 122 111 232 4 4 113 172 114 24 156 156 188 235 268 265 223 100

Woodlands
Old Ipswich Road
A12
Gatehouse F
Crown La
The Crescent
Willow Lodge
76 76 149 149

COLCHESTER
CLACTON-ON-SEA
BRIGHTLINGSEA
TENDRING DISTRICT
WIVENHOE
Harwich International Port
VEHICLE FERRY FROM HARWICH INTERNATIONAL PORT TO Hook of Holland 7 hours

LEGEND

- Onshore Order Limits
- Offshore Order Limits
- Onshore Export Cable Corridor Section Division
- Onshore Export Cable Corridor
- Substation Operational Boundary
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Construction Access Route

- Core Access Route
- Local Access Route to Temporary Construction Compound - All Vehicles
- Local Access Route Car/LGV Only (Assessed Route in the Study Area)
- XX 2-Way Link Flow

0 1 2 4
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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

DRAWING TITLE:
PEAK MONTH FIVE ESTUARIES TWO-WAY DAILY TRAFFIC FLOWS (WORKFORCE)

VER	DATE	REMARKS	Drawn	Checked
1	07/03/2024	ES Submission	DB	JRS

DRAWING NUMBER: 8.15

SCALE:	PLOT SIZE:	DATUM:	PROJECTION:
1:90,000	A3	OSGB 1936	British National Grid

FIVE ESTUARIES
OFFSHORE WIND FARM

595000 600000 605000 610000 615000 620000 625000

235000 230000 225000 220000 215000

N

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67372 78353 50246 10441 2258 559 1042 1547 14787 14320 24345 13125 34246 12078 14929 8464 5872 2503 1893 10245 15348 6143 22930 5750 12526 11868 17064 14853 16807 7627 7922

Woodlands
Old Ipswich Road
A12
Gatehouse F
Crown La
The Crescent
Willow Lodge
10008 10345 7968 9294

COLCHESTER
CLACTON-ON-SEA
BRIGHTLINGSEA
TENDRING DISTRICT
Harwich International Port
VEHICLE FERRY FROM HARWICH INTERNATIONAL PORT TO Hook of Holland 7 hours

LEGEND

- Onshore Order Limits
- Offshore Order Limits
- Onshore Export Cable Corridor Section Division
- Onshore Export Cable Corridor
- Substation Operational Boundary
- North Falls Indicative Substation Operational Boundary
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- National Grid EACN Substation Zone

Construction Access Route

- Core Access Route
- Local Access Route to Temporary Construction Compound - All Vehicles
- Local Access Route Car/LGV Only (Assessed Route in the Study Area)
- XX 2-Way Link Flow

0 1 2 4
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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

DRAWING TITLE:
2027 BASELINE PLUS PEAK MONTH FIVE ESTUARIES TWO-WAY DAILY TRAFFIC FLOWS (TOTAL TRAFFIC)

VER	DATE	REMARKS	Drawn	Checked
1	07/03/2024	ES Submission	DB	JRS

DRAWING NUMBER: 8.16

SCALE:	PLOT SIZE:	DATUM:	PROJECTION:
1:90,000	A3	OSGB 1936	British National Grid

FIVE ESTUARIES
OFFSHORE WIND FARM

595000 600000 605000 610000 615000 620000 625000

235000 230000 225000 220000 215000

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6588 6731 3664 2147 2042 1441 952 649 246 47 12 30 235 244 2252 210 91 126 468 328 301 196 229 707 170 149 334 254 235 2266 2437

Woodlands
A12
Old Ipswich Road
Gatehouse F
Crown La
The Crescent
Willow Lodge
1311 969 819 979

COLCHESTER
BRIGHTLINGSEA
CLACTON-ON-SEA
FRINTO

VEHICLE FERRY FROM HARWICH INTERNATIONAL PORT TO Hook of Holland 7 hours

LEGEND

- Onshore Order Limits
- Offshore Order Limits
- Onshore Export Cable Corridor Section Division
- Onshore Export Cable Corridor
- Substation Operational Boundary
- North Falls Indicative Substation Operational Boundary
- Landfall Compound Zone
- National Grid EACN Substation Zone

Construction Access Route

- Core Access Route
- Local Access Route to Temporary Construction Compound - All Vehicles
- Local Access Route Car/LGV Only (Assessed Route in the Study Area)
- XX 2-Way Link Flow

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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

DRAWING TITLE:
2027 BASELINE PLUS PEAK MONTH FIVE ESTUARIES TWO-WAY DAILY TRAFFIC FLOWS (HGVs)

VER	DATE	REMARKS	Drawn	Checked
1	07/03/2024	ES Submission	DB	JRS

DRAWING NUMBER: 8.17

SCALE:	PLOT SIZE:	DATUM:	PROJECTION:
1:90,000	A3	OSGB 1936	British National Grid

FIVE ESTUARIES
OFFSHORE WIND FARM

8.9 MITIGATION

8.9.1 The mitigation contained in Table 8.19 are mitigation measures or commitments that have been identified and adopted as part of the evolution of the project design of relevance to the topic, these include project design measures, compliance with elements of good practice and use of standard protocols.

Table 8.19: Mitigation relating to Traffic and Transport

Project phase	Mitigation measures
Construction	
Outline Construction Traffic Management Plan (Outline CTMP)	Volume 9, Report 26: Outline CTMP sets out the key principles and types of measures to be implemented during construction of VE.
Outline Workforce Travel Plan (Outline WTP)	Volume 9, Report 26: Outline WTP is provided and includes a range of demand management measures including a target car share ratio. The Outline WTP also provides details of how compliance with targets will be measured, monitored and reported upon.
Outline Public Access Management Plan (Outline PAMP)	Volume 9, Report 25: Outline PAMP sets out the anticipated mechanisms for managing the use of PRoW.
Strategy for access	The strategy for access has selected routes that where possible, seek to reduce the impact of traffic upon local communities. It has minimised the use of minor roads, with the project using haul roads along the corridor to gain access to the works from a limited number of construction access points.
Use of temporary haul roads.	Maximising the length of temporary haul roads at construction sites, to remove as much HGV traffic from the local highway network as possible.
Junction improvement at the A120/Bentley Road junction	Sections of Bentley Road, including the junction with the A120 requires widened to facilitate HGV access – see Section 7.0 and Appendix X of Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2. The proposals may also include a segregated WCH path, and the proposed Order Limits include land to enable these, should they be deemed to be required.
Temporary speed limit reduction	Temporary speed limit reduction on Bentley Road from national speed limit (60mph) to 40mph.

Project phase	Mitigation measures
	Temporary speed limit reduction from national speed limit (60mph) to 30mph on the B1035 Thorpe Road/ Tendring Road
Decommissioning	
Best practice construction measures	Decommissioning works would be undertaken in accordance with best practice measures at the relevant time.

8.10 ENVIRONMENTAL ASSESSMENT: CONSTRUCTION PHASE

8.10.1 This section considers the construction phase impacts of VE on Traffic and Transport, through reference to the MDS presented in Table 8.18.

8.10.2 The forecast VE vehicle movements (minimum, maximum and average) to and from each Onshore ECC Route Section, OnSS and 400kV connection for Scenario 1 are summarised in Table 8.20.

8.10.3 The forecast VE vehicle movements on each highway link used in the assessment have been derived from the maximum figures in Table 8.20.

Table 8.20 Minimum, maximum and average daily traffic generation (two way movements) estimates (Scenario 1)

Route Section	Total vehicles			HGVs			Employee vehicles (car occupancy 1.5)		
	Min	Max	Av.	Min	Max	Av.	Min	Max	Av.
Section 1 (incl. Landfall HDD compound)	77	242	153	38	106	71	35	145	82
Section 2	0	103	61	0	33	22	0	77	38
Section 3	85	175	134	25	87	62	34	109	72
Section 4a	14	87	57	3	39	21	11	59	36
Section 4b	68	146	112	16	72	50	34	84	61
Section 5	43	128	88	28	57	38	11	83	49
Section 6/7	75	160	107	16	91	50	34	81	57

Route Section	Total vehicles			HGVs			Employee vehicles (car occupancy 1.5)		
	Min	Max	Av.	Min	Max	Av.	Min	Max	Av.
OnSS and unlicensed works	37	334	166	9	133	58	27	201	108
400kV works	0	86	23	0	42	9	0	55	14
Beach access to support landfall works	0	92	12	0	39	5	0	53	9

DRIVER SEVERANCE AND DELAY

PEAK HOUR TRAFFIC IMPACT

8.10.4 A screening process has been undertaken for each link to identify routes that are likely to have sufficient changes in traffic flows in the peak hours on the highway network and therefore require further impact assessment for driver severance and delay.

8.10.5 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 VE during the construction phase, using the worst-case assumptions set out in the MDS.

8.10.6 Table 8.21 shows the maximum forecast vehicle movements (HGV and car/LGVs) associated with the construction of VE during the peak hours on the highway network for Scenario A and the highway links that are different in Scenario B in Table 8.22Table 8.22. The maximum12-month average peak hour vehicle movements and the average (across the 18-month construction period for the VE Onshore ECC and 400kv connection and 19-month construction programme for the VE OnSS) are presented in Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2, to provide a comparison.

Table 8.21: Maximum two-way peak hour vehicle movements on each highway link (Scenario A)

Link ID	Highway link	Maximum two-way		
		Total vehicles	HGVs	Workforce (car/LGV)
1	A12 (N)	35	20	15
2	A12 (S)	35	20	15
6	A12 (N) off-slip at J29 Roundabout	13	5	8
7	A12 (N) on-slip at J29 Roundabout	13	5	8
8	A120 (E) off-slip at J29 Roundabout	18	5	15
9	A120 (E) on-slip at J29 Roundabout	18	5	15
10	A120 (A12 J29 to the A133)	70	40	30
11	A120 (A133 to Harwich Road)	61	40	21
12	A120 (Harwich Road to Bentley Road)	90	40	50
13	A120 (Bentley Road to the B1035)	87	40	47
14	A120 (East of B1035)	16	0	16
15	A120 at Harwich	16	0	16
16	A133 (A120 to the A133 Main Road)	36	16	20
17	A133 (A133 Main Road to the B1033)	26	16	10
18	A133 (B1033 to the B1027)	49	16	33
19	A133 Clacton Road (Elmstead Market)	9	0	9
20	A133 Main Road	14	0	14
21	B1027 St John's Road (west of Clacton)	10	0	10
22	B1027 Colchester Road (St Osyth Park)	3	0	3
23	B1027 Valley Road (Clacton)	22	9	13
24	B1032 Frinton Road	35	9	26
25	B1032 Clacton Road	36	9	27
26	B1033 Colchester Road (west of B1441)	34	13	21
27	B1441 Clacton Road	17	6	11
28	B1414 Harwich Road	17	6	11
29	B1033 Frinton Road	23	6	17
30	B1033 Colchester Road (east of B1441)	19	7	12
31	B1035 Tendring Road	30	7	23
32	B1035 Thorpe Road	22	3	19
33	B1035 south of A120	27	6	21
34	B1035 Clacton Road	7	2	4
35	Bentley Road	57	18	39
36	Bentley Road/Shop Road/Bromley Road	10	0	10
37	B1035 Clacton Road (north of AC-8)	0	0	0

		Maximum two-way		
38	B1441 via Little Clacton	0	0	0
39	Progress Way	0	0	0
40	B1029 Harwich Road	20	0	20
41	Harwich Road	20	0	20
42	B1032 Kirby Cross	2	0	2
43	B1033 Thorpe Road	11	0	11
44	B1029 (north of Harwich Road)	23	0	23
45	Waterhouse Lane	23	0	23

Table 8.22: Maximum two-way peak hour vehicle movements on each highway link (Scenario B – highway links different to Scenario A)

Link ID	Highway link	Maximum two-way		
		Total vehicles	HGVs	Workforce (car/LGV)
1	A12 (N)	15	0	15
2	A12 (S)	15	0	15
6	A12 (N) off-slip at J29 Roundabout	17	10	7
7	A12 (N) on-slip at J29 Roundabout	17	10	7
8	A120 (E) off-slip at J29 Roundabout	22	7	15
9	A120 (E) on-slip at J29 Roundabout	22	7	15
10	A120 (A12 J29 to the A133)	86	56	29
14	A120 (East of B1035)	55	40	15
15	A120 at Harwich	55	40	15

8.10.7 The highway links with greater than 30 two-way vehicle movements, which is the threshold for the consideration of undertaking a junction capacity assessment, as set out in Paragraph 8.4.9 and Table 8.5, are shown in Table 8.10:

Table 8.23: Highway links with greater than 30 two-way vehicle movements in a peak hour (Scenario A or Scenario B)

Link ID	Highway link	Maximum two-way peak hour
1	A12 (N)	35
2	A12 (S)	35
10	A120 (A12 J29 to the A133)	70
11	A120 (A133 to Harwich Road)	61
12	A120 (Harwich Road to Bentley Road)	90
13	A120 (Bentley Road to the B1035)	87
14	A120 (East of B1035)	55

Link ID	Highway link	Maximum two-way peak hour
15	A120 at Harwich	55
16	A133 (A120 to the A133 Main Road)	36
18	A133 (B1033 to the B1027)	49
24	B1032 Frinton Road	35
25	B1032 Clacton Road	36
26	B1033 Colchester Road (west of B1441)	34
35	Bentley Road	57

8.10.8 Despite the highway links in Table 8.23 breaching the 30 two-way vehicle movement threshold, no further assessment has been undertaken, as set out in Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2 and summarised in Table 8.24.

Table 8.24: Justification for not assessing the junctions on the highway links forecast to have greater than 30 two-way vehicle movements

Link ID	Junction	Justification
1/2	A12 J29	VE construction vehicle movements dissipate (and are below 30 two-way vehicle movements) on the various on and off-slips or free flow links.
10	A12 J29 or A120/A133	
11/12	A120/Harwich Road	Baseline peak hour traffic flows at the junction higher in the summer when peak hour vehicle movements associated with the constriction of VE are less likely.
12	A120/Bentley Road	Free flow movement from the A120 to Bentley Road
13/14	A120/B1035	Estimate of negligible increases in queue lengths at the junction as a result of peak hour VE construction traffic Lower maximum 12-month average and average peak hour VE construction vehicle movements and 100% of HGVs via the A120 east of the B1035 very unlikely and therefore the peak hour flows presented are very robust.
14/15	A120 Junctions to the east of the B1035	Lower maximum 12-month average and average peak hour VE construction vehicle movements and 100% of HGVs via the A120 east of the B1035 very unlikely and therefore the peak hour flows presented are very robust.
16	A133/A133 Main Road	Baseline peak hour traffic flows at the junction likely to be higher in the summer when peak hour

Link ID	Junction	Justification
		vehicle movements associated with the construction of VE are less likely.
18	A133/B1027	Baseline peak hour traffic flows at the junction are higher in the summer when peak hour vehicle movements associated with the construction of VE are less likely.
24	Junctions on the B1032 Frinton Road	Two-way peak hour construction VE vehicle movements on arms of junctions would be fewer than 30 based on the direction of travel of workforce vehicles and HGVs.
24/25	B1032 Frinton Road/B1032 Clacton Road	Peak hour traffic flows at the junction are higher in the summer when peak hour vehicle movements associated with the construction of VE are less likely. Two-way peak hour construction VE vehicle movements on arms of junctions would be fewer than 30 based on the direction of travel of workforce vehicles and HGVs.
26	B1033 Colchester Road (west of B1441)	Peak hour traffic flows at the junction are higher in the summer when peak hour vehicle movements associated with the construction of VE are less likely. Two-way peak hour construction VE vehicle movements on arms of junctions would be fewer than 30 based on the direction of travel of workforce vehicles and HGVs.
35	Bentley Road	Very low existing number of vehicle movements on Bentley Road and a negligible queue, which is unlikely to increase significantly.

8.10.9 Taking the analysis set out above and using Table 8.5, 30 two-way vehicle movements or less would be a negligible magnitude of impact and with any level of sensitivity the resulting adverse effect on driver severance and delay on all highway links would be **negligible or minor** which is **not significant** in terms of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017.

IMPACT OF OPEN TRENCHING ON HIGHWAY LINKS

8.10.10 A second 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 Paragraph 8.4.10.

8.10.11 It is assumed that any temporary road closure(s) to install the cable under a road using open trenching would be for a maximum of seven days and should more than one temporary road closure be required during the construction of VE, simultaneous closures will be avoided where practicable. All closures will be included in the final CTMP.

8.10.12 Table 8.25 provides the assessment of driver severance and delay on the highway links as a result of a temporary road closure.

8.10.13 For the identified magnitude of impact for each link, the use of traffic management measures in the Volume 9, Report 24: Outline CTMP 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 under the DCO requirements. Where direct access would be affected by a temporary road closure, the Applicant would liaise with those users directly to ensure minimal disruption as possible whilst an access is temporarily closed, which could include 24-hour working and/or providing alternative crossing, where appropriate. This would include liaising with the emergency services, to ensure access could be maintained during the closure.

Table 8.25: Assessment of severance and delay on the highway links as a result of a temporary road closure for export cable installation works

Link ID	Highway link	Sensitivity	Magnitude of impact	Level of effect
3	Damant's Farm Lane	Low	Low	**Minor adverse (not significant)**
8	Payne's Lane			
10	Barlon Road			

8.10.14 Based on the analysis in Table 8.25 for all highway links, temporary adverse effects on driver severance and delay would be **minor**, which is **not significant** in terms of the EIA Regulations. The option to use a trenchless technique has been retained, which would not result in any delay to users of the roads and therefore the assessment is the worst case.

IMPACT OF HIGHWAY IMPROVEMENT WORKS

8.10.15 Driver severance and delay would also be experienced as a result of any temporary lane closures to enable highway improvement works to be undertaken, as set out in Paragraph 8.4.118.4.10.

8.10.16 This relates to the proposed improvements at Bentley Road as set out in Table 8.19, which would be:

- Widening at the A120/Bentley Road junction (to the carriageway and the acceleration taper for merging traffic onto the A120);
- Widening the carriageway along Bentley Road to approximately 6.5m between the A120 and the AC-09/AC-10/AC-11; and
- A potential segregated non-motorised user lane along Bentley Road between the A120 and AC-09/AC-10/AC-11

8.10.17 Whilst the temporary traffic management measures that would need to be implemented to construct the above improvement works would need to be discussed and agreed with Essex County Council and NH (where appropriate) by the Principal Contractor as part of the detailed design process, it has been assumed that there would need to be some temporary lane or road closures. The temporary lane closures would be controlled through shuttle working using the open lane with temporary traffic signals or manual STOP/GO boards.

8.10.18 Should there be a requirement for a temporary road closure (assumed to be on Bentley Road only) a temporary diversion would be implemented and access for residents on Bentley Road would be provided.

8.10.19 For any temporary lane closure, vehicles on Bentley Road would only be delayed for a very short period whilst vehicles are using the open lane in the other direction, given the low baseline traffic flows currently using Bentley Road. Therefore, the magnitude of impact is considered to be **low adverse.** With low sensitivity, the temporary adverse effect on driver severance and delay would be **minor**, which is **not significant** in terms of the EIA Regulations.

AADT PERCENTAGE IMPACT ASSESSMENT SCREENING

8.10.20 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.

8.10.21 The screening process has been undertaken in accordance with GEART (Rule 1/Rule 2):

- Rule 1 - Include road 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.

8.10.22 Percentage impact calculations against a future baseline of 2027 have been undertaken for the maximum two-way daily trip generation on each highway link shown in Table 8.26 (Scenario A) and in Table 8.27 (Scenario B) on Figure 8.22 to Figure 8.24 (illustrating the maximum vehicle movements from Scenario A or B)

Table 8.26: Maximum two-way daily vehicle movements on each highway link (Scenario A)

Link ID	Highway link	Maximum two-way		
		Total vehicles	HGVs	Workforce (car/LGV)
1	A12 (N)	390	240	150
2	A12 (S)	384	240	144
5	A12 (S) on-slip at J29 Roundabout	196	120	76
6	A12 (N) off-slip at J29 Roundabout	135	60	75
7	A12 (N) on-slip at J29 Roundabout	135	60	75
8	A120 (E) off-slip at J29 Roundabout	207	60	147
9	A120 (E) on-slip at J29 Roundabout	207	60	147
10	A120 (A12 J29 to the A133)	773	479	294
11	A120 (A133 to Harwich Road)	685	479	205
12	A120 (Harwich Road to Bentley Road)	1026	479	546
13	A120 (Bentley Road to the B1035)	995	479	516
14	A120 (East of B1035)	155	0	155
15	A120 at Harwich	155	0	155
16	A133 (A120 to the A133 Main Road)	548	194	353
17	A133 (A133 Main Road to the B1033)	290	194	95
18	A133 (B1033 to the B1027)	527	194	332

				Maximum two-way
19	A133 Clacton Road (Elmstead Market)	89	0	89
20	A133 Main Road	140	0	140
21	B1027 St John's Road (west of Clacton)	99	0	99
22	B1027 Colchester Road (St Osyth Park)	29	0	29
23	B1027 Valley Road (Clacton)	233	108	125
24	B1032 Frinton Road	372	108	264
25	B1032 Clacton Road	376	108	268
26	B1033 Colchester Road (west of B1441)	368	159	209
27	B1441 Clacton Road	188	77	111
28	B1414 Harwich Road	189	77	113
29	B1033 Frinton Road	249	77	172
30	B1033 Colchester Road (east of B1441)	204	83	122
31	B1035 Tendring Road	316	83	234
32	B1035 Thorpe Road	226	39	187
33	B1035 south of A120	278	72	206
34	B1035 Clacton Road	71	29	42
35	Bentley Road	661	212	449
36	Bentley Road/Shop Road/Bromley Road	96	0	96
37	B1035 Clacton Road (north of AC-8)	0	0	0
38	B1441 via Little Clacton	4	0	4
39	Progress Way	4	0	4
40	B1029 Harwich Road	199	0	199
41	Harwich Road	200	0	200
42	B1032 Kirby Cross	24	0	24
43	B1033 Thorpe Road	114	0	114
44	B1029 (north of Harwich Road)	158	0	158
45	Waterhouse Lane	158	0	158

Table 8.27: Maximum two-way daily vehicle movements on each highway link (Scenario B – highway links different to Scenario A)

Link ID	Highway link	Maximum two-way		
		Total vehicles	HGVs	Workforce (car/LGV)
1	A12 (N)	150	0	150
2	A12 (S)	144	0	144
5	A12 (S) on-slip at J29 Roundabout	76	0	76
6	A12 (N) off-slip at J29 Roundabout	75	0	75
7	A12 (N) on-slip at J29 Roundabout	75	0	75
8	A120 (E) off-slip at J29 Roundabout	232	85	147
9	A120 (E) on-slip at J29 Roundabout	232	85	147
10	A120 (A12 J29 to the A133)	968	673	294
14	A120 (East of B1035)	634	479	155
15	A120 at Harwich	634	479	155

8.10.23 The 2027 baseline with maximum VE vehicle movements are shown in Figure 8.25 and Figure 8.26.

8.10.24 The percentage impacts of the VE construction traffic on 2027 baseline traffic flows on each highway link is shown in Table 8.28 for assessment Scenario A and in Table 8.29 for assessment Scenario B.

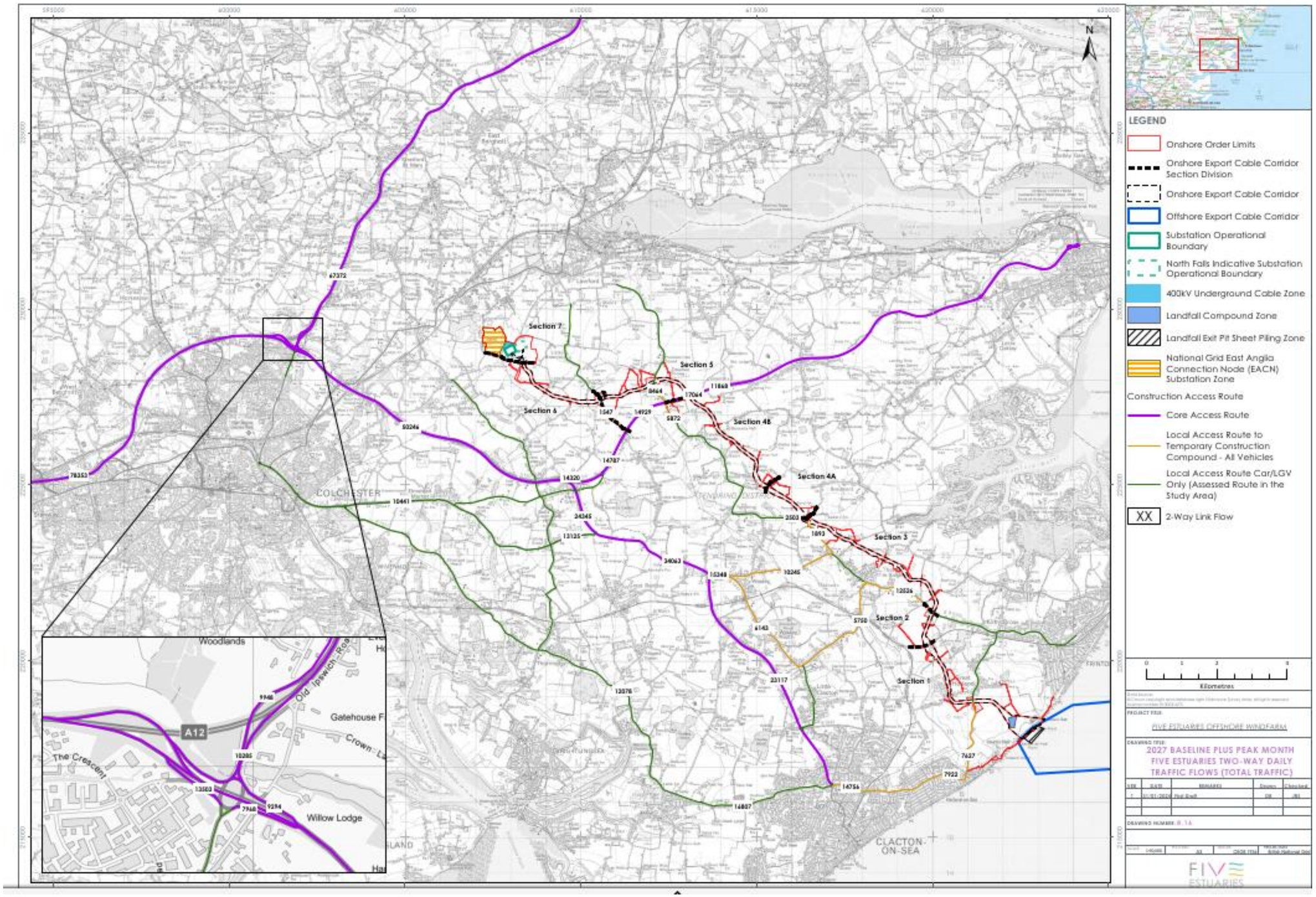

Figure 8.25 Construction year (2027) ADT/AADT and maximum VE (total traffic)

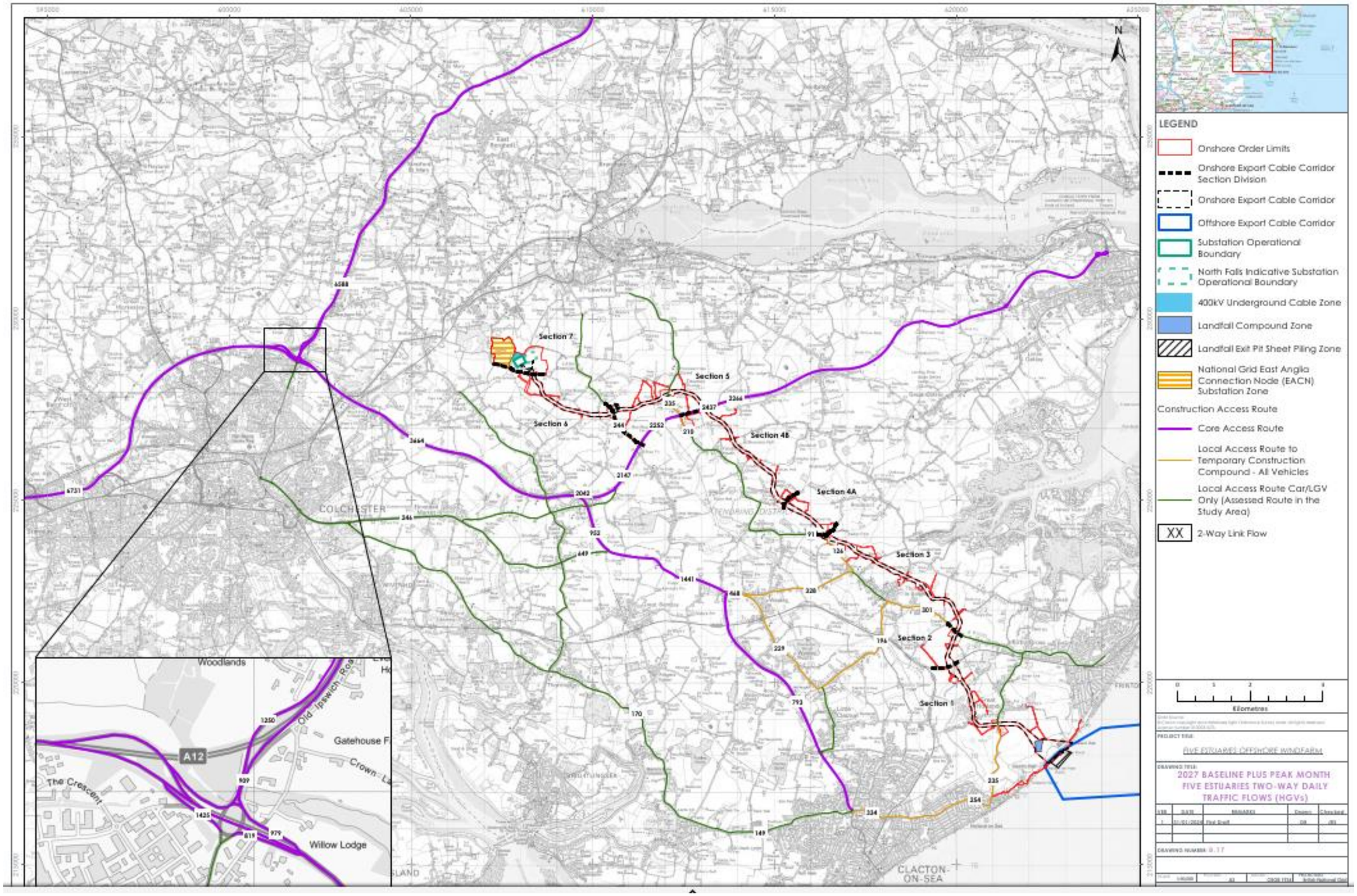

Figure 8.26 Construction year (2027) ADT/AADT with maximum VE (HGVs)

Table 8.28: Maximum trip generation percentage impacts (Scenario A)

Link ID[12]	Highway link	2027 baseline		VE peak trip generation		Percentage impact (%)	
		Total	HGV	Total	HGV	Total	HGV
1	A12 (N)	66,979	6,347	390	240	0.6	3.8
2	A12 (S)	77,966	6,490	384	240	0.5	3.7
6	A12 (N) off-slip at J29 Roundabout	10,149	849	135	60	1.3	7.1
7	A12 (N) on-slip at J29 Roundabout	9,812	1,190	135	60	1.4	5.0
8	A120 (E) off-slip at J29 Roundabout	7,735	734	207	60	2.7	8.2
9	A120 (E) on-slip at J29 Roundabout	9,061	895	207	60	2.3	6.7
10	A120 (J29 to A133)	49,273	2,988	773	479	1.6	16.0
11	A120 (A133 to Harwich Road)	13,630	1,560	685	479	5.0	30.7
12	A120 (Harwich Road to Bentley Road)	13,804	1,665	1,026	479	7.4	28.8
13	A120 (Bentley Road to the B1035)	13,978	1,770	995	479	7.1	27.1
14	A120 (East of B1035)	16,426	1,955	155	0	0.9	0.0
15	A120 at Harwich	11,230	1,784	155	0	1.4	0.0
16	A133 (A120 to the A133 Main Road)	23,952	757	548	194	2.3	25.7
17	A133 (A133 Main Road to the B1033)	33,772	1,246	290	194	0.9	15.6
18	A133 (B1033 to the B1027)	22,589	599	527	194	2.3	32.4

[12] No VE construction vehicles forecast on Links 3 and 4

Link ID[12]	Highway link	2027 baseline		VE peak trip generation		Percentage impact (%)	
		Total	HGV	Total	HGV	Total	HGV
19	A133 Clacton Road (Elmstead Market)	10,351	246	89	0	0.9	0.0
20	A133 Main Road	12,984	649	140	0	1.1	0.0
21	B1027 St John's Road (west of Clacton)	16,707	149	99	0	0.6	0.0
22	B1027 Colchester Road (St Osyth Park)	12,049	170	29	0	0.2	0.0
23	B1027 Valley Road (Clacton)	14,523	226	233	108	1.6	47.9
24	B1032 Frinton Road	7,550	146	372	108	4.9	74.2
25	B1032 Clacton Road	7,251	127	376	108	5.2	85.3
26	B1033 Colchester Road (west of B1441)	14,980	309	368	159	2.5	51.5
27	B1441 Clacton Road	5,955	153	188	77	3.2	50.1
28	B1414 Harwich Road	5,561	120	189	77	3.4	63.8
29	B1033 Frinton Road	12,277	225	249	77	2.0	34.0
30	B1033 Colchester Road (east of B1441)	10,041	245	204	83	2.0	33.7
31	B1035 Tendring Road	1,576	43	316	83	20.1	190.3
32	B1035 Thorpe Road	2,275	52	226	39	10.0	74.7
33	B1035 south of A120	5,594	138	278	72	5.0	52.3
34	B1035 Clacton Road	8,393	206	71	29	0.8	13.8
35	Bentley Road	946	30	661	212	69.9	708.4
36	Bentley Road/Shop Road/Bromley Road	946	30	96	0	10.1	0.0

Link ID[12]	Highway link	2027 baseline		VE peak trip generation		Percentage impact (%)	
		Total	HGV	Total	HGV	Total	HGV
37	B1035 Clacton Road (north of AC-8)	No baseline data available, estimated minimum total daily flow of 2,500, based on a review of DfT data of similar highway links in the study area		0	0	Based on the baseline daily flow estimates, there would be no percentage impact greater than 10%, which would be the minimum threshold for formal assessment.	
38	B1441 via Little Clacton			4	0		
39	Progress Way			4	0		
40	B1029 Harwich Road			199	0		
41	Harwich Road			200	0		
42	B1032 Kirby Cross			24	0		
43	B1033 Thorpe Road			114	0		
44	B1029 (north of Harwich Road)	2,240	50	158	0	6.4	n/a
45	Waterhouse Lane	428	13	158	0	54.3	n/a

Table 8.29: Maximum trip generation percentage impacts (Scenario B – highway links different to Scenario A)

Link ID[13]	Highway link	2027 baseline		VE peak trip generation		Percentage impact (%)	
		Total	HGV	Total	HGV	Total	HGV
1	A12 (N)	66,979	6,347	150	0	0.2	0.0
2	A12 (S)	77,966	6,490	144	0	0.2	0.0
6	A12 (N) off-slip at J29 Roundabout	10,149	849	75	0	0.7	0.0

[13] No VE construction vehicles forecast on Links 3 and 4

Link ID[13]	Highway link	2027 baseline		VE peak trip generation		Percentage impact (%)	
		Total	HGV	Total	HGV	Total	HGV
7	A12 (N) on-slip at J29 Roundabout	9,812	1,190	75	0	0.8	0.0
8	A120 (E) off-slip at J29 Roundabout	7,735	734	232	85	3.0	11.5
9	A120 (E) on-slip at J29 Roundabout	9,061	895	232	85	2.6	9.5
10	A120 (J29 to A133)	49,273	2,988	968	673	2.0	22.5
14	A120 (East of B1035)	16,426	1,955	634	479	4.7	30.7
15	A120 at Harwich	11,230	1,784	634	479	4.6	28.8

8.10.25 Using the trip generation identified in Table 8.28 and Table 8.30, which shows the maximum predicted daily total and HGV traffic increases on each highway link (from Scenario A or B) and in accordance with the Institute of Environmental Management and Assessment (IEMA), Guidelines for Environmental Assessment of Road Traffic (GEART), 1993, 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.

8.10.26 The screening assessment, which identifies the sensitivity of each link to changes in traffic is shown in Table 8.30.

Table 8.30: Maximum trip generation percentage impacts (from Scenario A or B) - Screening

Link ID	Highway link	Percentage impact		Sensitivity	Threshold (%)		Formal assessment?
		Total	HGV		Total	HGV	
1	A12 (N)	0.6	3.8	Negligible	30	30	No
2	A12 (S)	0.5	3.7	Negligible	30	30	No
6	A12 (N) off-slip at J29 Roundabout	1.3	7.1	Negligible	30	30	No
7	A12 (N) on-slip at J29 Roundabout	1.4	5.0	Negligible	30	30	No
8	A120 (E) off-slip at J29 Roundabout	2.7	8.2	Negligible	30	30	No
9	A120 (E) on-slip at J29 Roundabout	2.3	6.7	Negligible	30	30	No
10	A120 (J29 to A133)	2.0	22.5	Negligible	30	30	No
11	A120 (A133 to Harwich Road)	5.0	29.7	Negligible	30	30	No
12	A120 (Harwich Road to Bentley Road)	7.4	28.8	Negligible	30	30	No
13	A120 (Bentley Road to the B1035)	7.1	27.1	Negligible	30	30	No
14	A120 (East of B1035)	4.7	29.7	Negligible	30	30	No
15	A120 at Harwich	4.6	28.8	Negligible	30	30	No
16	A133 (A120 to the A133 Main Road)	2.3	25.7	Low	30	30	No
17	A133 (A133 Main Road to the B1033)	0.9	15.6	Low	30	30	No
18	A133 (B1033 to the B1027)	2.3	32.4	Low	30	30	Yes
19	A133 Clacton Road (Elmstead Market)	0.9	0.0	Low	30	30	No
20	A133 Main Road	1.1	0.0	Low	30	30	No

Link ID	Highway link	Percentage impact		Sensitivity	Threshold (%)		Formal assessment?
		Total	HGV		Total	HGV	
21	B1027 St John's Road (west of Clacton)	0.6	0.0	Low	30	30	No
22	B1027 Colchester Road (St Osyth Park)	0.2	0.0	Low	30	30	No
23	B1027 Valley Road (Clacton)	1.6	47.9	High	10	30	Yes
24	B1032 Frinton Road	4.9	74.2	High	10	30	Yes
25	B1032 Clacton Road	5.2	85.3	Low	30	30	Yes
26	B1033 Colchester Road (west of B1441)	2.5	51.5	Medium	10	30	Yes
27	B1441 Clacton Road	3.2	50.1	High	10	30	Yes
28	B1414 Harwich Road	3.4	63.8	Medium	10	30	Yes
29	B1033 Frinton Road	2.0	34.0	High	10	30	Yes
30	B1033 Colchester Road (east of B1441)	2.0	33.7	High	10	30	Yes
31	B1035 Tendring Road	20.1	190.3	Medium	10	30	Yes
32	B1035 Thorpe Road	10.0	74.7	Low	30	30	Yes
33	B1035 south of A120	5.0	52.3	Negligible	30	30	Yes
34	B1035 Clacton Road	0.8	13.8	Low	30	30	No
35	Bentley Road	69.9	708.4	Low	30	30	Yes
36	Bentley Road/Shop Road/Bromley Road	10.1	0.0	Low/Medium	30	10	No
44	B1029 (north of Harwich Road)	6.4	n/a	Medium	10	30	No
45	Waterhouse Lane	54.3	n/a	High	10	30	Yes

8.10.27 The highway links that are identified for further assessment in terms of the impact of a change in traffic volume within the ES are summarised in Table 8.31, with the assessment scenario(s) that the potential impacts related to:

Table 8.31: Highway links taken forward for assessment

Link ID	Highway link	Percentage impact	
		Total	HGV
18	A133 (B1033 to B1027)	2.3	32.4
23	B1027 Valley Road (Clacton)	1.6	47.9
24	B1032 Frinton Road	4.9	74.2
25	B1032 Clacton Road	5.2	85.3
26	B1033 Colchester Road (west of B1441)	2.5	51.5
27	B1441 Clacton Road	3.2	50.1
28	B1414 Harwich Road	3.4	63.8
29	B1033 Frinton Road	2.0	34.0
30	B1033 Colchester Road (east of B1441)	2.0	33.7
31	B1035 Tendring Road	20.1	190.3
32	B1035 Thorpe Road	10.0	74.7
33	B1035 south of A120	5.0	52.3
35	Bentley Road	69.9	708.4
45	Waterhouse Lane	45.3	0.0

8.10.28 For Bentley Road, due to the very low baseline number of HGVs (as it has a Traffic Regulation Order (TRO) restricting use by HGVs for access only), the resulting percentage impact with the addition of HGVs associated with the construction of VE is high and should be treated with caution, as stated in Paragraph 3.1.6 of GEATM.

COMMUNITY SEVERANCE

8.10.29 In Table 8.5 less than a 10% increase in total traffic is considered a negligible magnitude of impact of the potential effect of community severance. Table 8.32 summarises the level of effects on these links with a negligible magnitude of impact:

Table 8.32: Highway links - negligible magnitude of impact (community severance)

Link ID	Highway link	Sensitivity	Level of effect
18	A133 (B1033 to B1027)	Low	Negligible
23	B1027 Valley Road (Clacton)	High	Minor
24	B1032 Frinton Road	High	Minor
25	B1032 Clacton Road	Low	Negligible
26	B1033 Colchester Road (west of B1441)	Medium	Minor
27	B1441 Clacton Road	High	Minor
28	B1414 Harwich Road	Medium	Minor
29	B1033 Frinton Road	High	Minor
30	B1033 Colchester Road (east of B1441)	High	Minor
33	B1035 south of A120	Negligible	Negligible

8.10.30 In summary, there would be a negligible or minor adverse effect on community severance on all the highway links in Table 8.32 which is **not significant** in terms of the EIA Regulations.

8.10.31 For the highway links with a low magnitude of impact:

- B1035 Tendring Road, which has medium sensitivity, would result in a **minor** adverse effect, which is **not significant** in terms of the EIA Regulations; and
- B1035 Thorpe Road, which has low sensitivity would result in a **minor** adverse effect, which is **not significant** in terms of the EIA Regulations.

8.10.32 The magnitude of impact on Waterhouse Lane (and Little Bromley Road/Ardleigh Road) would be medium based on Table 8.5. The greatest sensitivity on the route would be on Waterhouse Lane, which is defined as being high. However, as the number of pedestrian movements across these highway links are likely to be limited, given there are no local facilities along it, the sensitivity to community severance can be reduced to medium. Also, as the only VE construction vehicles would be cars and LGVs only and would predominantly be in one direction at the start of the working day and one direction at the end of the working day, the magnitude of impact can be reduced to low. Therefore, this would result in an adverse effect that has **minor significance,** which is not **significant** in terms of the EIA Regulations.

8.10.33 Bentley Road which has low sensitivity, would have a high magnitude of impact. However, the magnitude of impact can be reduced to **low** adverse for the following reasons:

- There are only several residential properties and no local facilities and therefore unlikely to be many pedestrian movements, or a reason to cross the road;
- With the exception of any temporary lane or road closure associated with the proposed improvements works on Bentley Road (see paragraphs 8.10.15 to 8.10.19), given the very low baseline traffic flows, the proposed improvement works, the ability for Bentley Road to accommodate the additional vehicle movements associated with the construction of VE and the management of VE

construction vehicles at AC-09, AC-10 an AC-10, there would be no blocking or significant delays to other vehicles on Bentley Road; and

- There are also no PRoW intersecting with the section of Bentley Road, which would require walking in or crossing the carriageway, such as members of the local communities walking dogs for example.

8.10.34 Based on the above, there would be a **minor** adverse effect, which is **not significant** in terms of the EIA Regulations.

VULNERABLE ROAD USERS AND ROAD SAFETY

8.10.35 In Table 8.5 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 links is the same as for community severance set out in 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 8.32, which is **not significant** in terms of the EIA Regulations.

8.10.36 The change in traffic flow on the B1035 Tendring Road, B1035 Thorpe Road, Bentley Road, B1029 and Waterhouse Lane (including Little Bromley Road/Ardleigh Road) is 10% or greater, and according to Table 8.5, a qualitative assessment of the accident records is required to identify the adverse magnitude of impact.

8.10.37 There have been no PIAs on the B1035 Tendring Road within the assessment period. The B1035 Tendring Road is considered a highway link with medium sensitivity and taking the accident rate into account and with the mitigation including Volume 9, Report 24: Outline CTMP, the magnitude of impact on vulnerable road users and road safety is considered to be negligible, which would result in a **minor** adverse effect which is **not significant** in terms of the EIA Regulations.

8.10.38 There have been no PIAs on the section of the B1035 Thorpe Road that triggers the assessment (to the west of AC-05) within the assessment period. The B1035 Thorpe Road is considered a highway link with low sensitivity and taking the accident rate into account, the magnitude of impact of 10% and with the mitigation including Volume 9, Report 24: Outline CTMP, the magnitude of impact on vulnerable road users and road safety is considered to be negligible, which would result in a **negligible** adverse effect, which is **not significant** in terms of the EIA Regulations.

8.10.39 There have been two PIA on Bentley Road in the assessment period, one slight and one serious in severity, at different locations. The PIAs were due to driver error and did not involve a WCH.

8.10.40 Bentley Road is considered a highway link with low sensitivity; however, for the effect on vulnerable road users and road safety, given the very low number of HGVs that use it and the width constraints for some sections, the sensitivity can be considered high.

8.10.41 However, with the mitigation of widening on Bentley Road, to facilitate two HGVs passing safely and the proposed temporary reduction in speed limit to 40 mph, the sensitivity can be reduced to medium. With the very low accident rate and account and with the mitigation including Volume 9, Report 24: Outline CTMP the magnitude of impact on vulnerable road users and road safety is considered to be low, which would result in a **Minor** adverse effect, which is **not significant** in terms of the EIA Regulations.

8.10.42 There have been no PIAs on Waterhouse Lane (including Little Bromley Road/Ardleigh Road). Waterhouse Lane is considered a highway link with high sensitivity; however, as the VE construction vehicles that could use this route would be cars/LGVs, the sensitivity can be reduced to medium.

8.10.43 Taking the existing highway safety record into account and the mitigation including Volume 9, Report 24: Outline CTMP, the magnitude of impact on vulnerable road users and road safety is considered to be low, which would result in a **minor** adverse effect, which is **not significant** in terms of the EIA Regulations.

PEDESTRIAN AMENITY

8.10.44 In Table 8.5, less than a 100% increase in total or HGV traffic is considered a negligible magnitude of impact on the potential effect on pedestrian amenity. Table 8.33 summarises the level of effects on these links:

Table 8.33: Highway links - negligible magnitude of impact (pedestrian amenity)

Link ID	Highway link	Sensitivity	Level of effect
18	A133 (B1033 to B1027)	Low	Negligible
23	B1027 Valley Road (Clacton)	High	Minor
24	B1032 Frinton Road	High	Minor
25	B1032 Clacton Road	Low	Negligible
26	B1033 Colchester Road (west of B1441)	Medium	Minor
27	B1441 Clacton Road	High	Minor
28	B1414 Harwich Road	Medium	Minor
29	B1033 Frinton Road	High	Minor
30	B1033 Colchester Road (east of B1441)	High	Minor
32	B1035 Thorpe Road	Low	Negligible
33	B1035 south of A120	Low	Negligible
45	Waterhouse Lane	High	Minor

8.10.45 The change in HGV traffic flow on the B1035 Tendring Road and Bentley Road is greater than 100% and according to Table 8.5 a review based upon the quantum of vehicles, vehicle speed and pedestrian footfall is required to identify the adverse magnitude of impact.

8.10.46 For the B1035 Tendring Road, which has medium sensitivity, a 191.7% increase in the number of HGVs is considered to be low magnitude of impact, given the very low number of daily HGVs on this highway link in the baseline (40), there is a footway adjacent to the six dwellings and there have been no PIAs in this location during the assessment period (also in the total 23 years of data using Crashmap). This would result in an **adverse effect that is minor** in significance which is **not significant** in terms of the EIA Regulations.

8.10.47 For Bentley Road, which has low sensitivity, an increase of 212 HGVs is considered to be a high magnitude of impact since Bentley Road is restricted to access only for HGVs (and very low number of HGV movements) and the increase in HGV movements would be noticeable to pedestrians walking in the carriageway. However, given it is unlikely that there would be many pedestrian movements on the section of Bentley road that would be used by VE construction vehicles and taking the proposed widening of Bentley Road into consideration, the magnitude of impact can be considered to be low, which would result in a **minor** adverse effect, which is **not significant** in terms of the EIA Regulations.

FEAR AND INTIMIDATION

8.10.48 As there are limited or no pedestrian movements on the A12, A120 and A133, these highway links have been screened out of the assessment of fear and intimidation.

8.10.49 Table 8.34 sets out the baseline assessment of fear and information using 2022 base year traffic flows and average speeds from the ATCs for highway links 23 to 35. DfT data has been used for link 45 (Waterhouse Lane) with an estimated average speed (a conservative estimate) as speed data is not available in the DfT data.

8.10.50 Table 8.35 sets out the assessment of fear and intimidation in 2027 with the addition of VE construction vehicle movements (Scenario 1). The average speeds assumed are the same as the baseline assessment.

8.10.51 The criteria in Table 8.3 and Table 8.4 have been used to derive the degree of hazard.

8.10.52 As shown in Table 8.34 and Table 8.35 there is no change in the level of fear and intimidation between the baseline assessment and the 2027 with VE assessment and therefore, using the criteria in Table 8.7, the magnitude of impact is negligible for all assessed highway links. Therefore, the highway links with negligible or low sensitivity (links 25 and 32 to 35) would result in a **negligible** adverse effect, which is **not significant** in terms of EIA Regulations.

8.10.53 For the highway links with medium or high sensitivity (links 23, 24, 26 to 31 and 45) would result in a **minor** adverse effect, which is **not significant** in terms of EIA Regulations.

Table 8.34: Fear and Intimidation – baseline assessment

Link ID	Highway link	Average traffic flow over 18-hour day – all vehicles/hour 2-way flow	Total 18-hour heavy vehicle flow	Average vehicle speed	Degree of hazard				Level of fear and intimidation
					Average traffic flow over 18-hour day – all vehicles/hour 2-way flow	Total 18-hour heavy vehicle flow	Average vehicle speed	Total score	
23	B1027 Valley Road (Clacton)	844	236	26	10	0	10	20	Small
24	B1032 Frinton Road	435	151	27	0	0	10	10	Small
25	B1032 Clacton Road	422	133	40	0	0	30	30	Moderate
26	B1033 Colchester Road (west of B1441)	816	303	39	10	0	20	30	Moderate
27	B1441 Clacton Road	348	160	34	0	0	20	20	Small
28	B1414 Harwich Road	350	136	36	0	0	20	20	Small
29	B1033 Frinton Road	686	226	37	10	0	20	30	Moderate
30	B1033 Colchester Road (east of B1441)	549	241	47	0	0	30	30	Moderate
31	B1035 Tendring Road	94	46	40	0	0	30	30	Moderate
32	B1035 Thorpe Road	137	56	44	0	0	30	30	Moderate
33	B1035 south of A120	335	149	43	0	0	30	30	Moderate
34	B1035 Clacton Road	495	219	43	0	0	30	30	Moderate
35	Bentley Road	57	32	41	0	0	30	30	Moderate
45	Waterhouse Lane	23	13	40	0	0	30	30	Small

Table 8.35: Fear and Intimidation – 2027 with VE (Scenario 1) assessment

Link ID	Highway link	Degree of hazard							
		Average traffic flow over 18-hour day – all vehicles/hour 2-way flow	Total 18-hour heavy vehicle flow	Average vehicle speed	Average traffic flow over 18-hour day – all vehicles/hour 2-way flow	Total 18-hour heavy vehicle flow	Average vehicle speed	Total score	Level of fear and intimidation
23	B1027 Valley Road (Clacton)	862	344	26	10	0	10	20	Small
24	B1032 Frinton Road	455	259	27	0	0	10	10	Small
25	B1032 Clacton Road	443	241	40	0	0	30	30	Moderate
26	B1033 Colchester Road (west of B1441)	837	462	39	10	0	20	30	Moderate
27	B1441 Clacton Road	358	237	34	0	0	20	20	Small
28	B1414 Harwich Road	361	212	36	0	0	20	20	Small
29	B1033 Frinton Road	700	303	37	10	0	20	30	Moderate
30	B1033 Colchester Road (east of B1441)	561	324	47	0	0	30	30	Moderate
31	B1035 Tendring Road	112	129	40	0	0	30	30	Moderate
32	B1035 Thorpe Road	149	95	44	0	0	30	30	Moderate
33	B1035 south of A120	351	221	43	0	0	30	30	Moderate
34	B1035 Clacton Road	499	247	43	0	0	30	30	Moderate
35	Bentley Road	90	247	40	0	0	30	30	Moderate
45	Waterhouse Lane	34	13	40	0	0	30	30	Small

DUST AND DIRT

8.10.54 In Table 8.5 less than a 10% increase in total traffic is considered a negligible magnitude of impact of the potential effects of dust and dirt and set out in Table 8.32. In summary, there would be a negligible or minor adverse effect of dust and dirt on all the highway links in Table 8.32, which is **not significant** in terms of the EIA Regulations.

8.10.55 For the highway links with a low magnitude of impact:

- B1035 Tendring Road, which has medium sensitivity, would result in a **minor** adverse effect**,** which is **not significant** in terms of the EIA Regulations; and
- B1035 Thorpe Road, which has low sensitivity, would result in a **minor** adverse effect which is **not significant** in terms of the EIA Regulations.

8.10.1 For Waterhouse Lane (including Little Bromley Road/Ardleigh Road), the medium magnitude of impact can be reduced to negligible, given the VE construction vehicles using this route would be cars and LGVs and speeds of vehicles would be very low. This would result in an adverse effect that has **minor significance,** which is **not significant** in terms of the EIA Regulations.

8.10.2 The magnitude of impact would be high for Bentley Road, which has low sensitivity, However, with wheel washing undertaken for vehicles leaving the construction accesses (AC-09) other dust and dirt restricting measures implemented (such as washing and damping down) in the final CTMP and AQMP and the low speed of HGVs along Bentley Road, the magnitude of impact can be reduced to medium. This would result in a **minor** adverse effect, which is **not significant** in terms of the EIA Regulations.

USERS OF PUBLIC RIGHTS OF WAY

8.10.3 The assessment of the potential impacts of users of PRoW is presented in Table 8.36 to Table 8.40: for the Onshore ECC route sections 1,3, 4a, 4b and 6. There are no PRoW in Onshore ECC Route Sections 2, 5 and 7, or in the OnSS zone or 400kV route.

Table 8.36: Assessment of users of PRoW (Onshore ECC route section 1)

PRoW	Sensitivity	Impact	Assessment	Magnitude of impact	Level of effect
FP29 167	High	Temporary use by VE construction traffic (crossed by the Onshore ECC using HDD or similar trenchless technique)	The footpath would be kept open and managed through warning signage and possible segregation (see proposed management measures in Volume 9, Report 25: Outline PAMP). Appropriate signage would be provided advising of an alternative route. The frequency of the vehicle movements associated with the construction phase of VE that would use this PRoW would be negligible therefore very short delays, if at all.	Negligible	**Minor adverse (not significant)**
FP3 164	Low	Use of track that forms part of the PRoW for operation and maintenance	Operation and maintenance track already used by vehicles. Driver training/awareness of the route shared with users of the PRoW.	Negligible	**Negligible adverse (not significant**
BR2 164					
FP1 164					
FP5 164	High	Use of track that forms part of the PRoW for operation and maintenance	Operation and maintenance track already used by vehicles. Driver training/awareness of the route shared with users of the PRoW.	Negligible	**Minor adverse (not significant**
FP10 164	Medium				
FP6 164	Medium	Adjacent to Onshore ECC	Appropriate warning signage would be provided. No temporary closure or diversion would be required.	Negligible	**Minor adverse (not significant)**

PRoW	Sensitivity	Impact	Assessment	Magnitude of impact	Level of effect
FP11 164	Medium	Temporary crossing by cable trenches and VE construction traffic on haul road/off-route haul road	The footpath would be kept open using a managed crossing (see proposed management measures in Volume 9, Report 25: Outline PAMP and temporarily diverted when the works are undertaken at this location (cable installation or installing/removing the haul road). If the footpath is temporarily diverted around the works using a temporary route, there would be <50 m additional journey length. If the footpath is temporarily diverted using FP38 164 and FP10 164, there would be around a 120m additional journey length (to the point where FP11 164 and FP10 164 meet), which is between 50 and 250m as defined in Table 8.5.	Negligible to low	**Minor adverse (not significant)**
FP38 164	Medium	Temporary crossing by VE construction traffic on off-route haul roads	The footpath would be kept open using a managed crossing and temporarily diverted for short periods to install/remove the haul road (see proposed management measures in Volume 9, Report 25: Outline PAMP. The temporary diversion would be <50 m additional journey length.	Negligible	**Minor adverse (not significant)**

Table 8.37: Assessment of users of PRoW (Onshore ECC route section 3)

PRoW	Sensitivity	Impact	Assessment	Magnitude of impact	Level of effect
FP13 180	Medium	Temporary crossing by Onshore ECC and VE construction traffic on haul road	The footpath would be kept open using a managed crossing (see proposed management measures in Volume 9, Report 25: Outline PAMP) and temporarily diverted when the works are undertaken at this location (cable installation or installing/removing the haul road). The temporary diverted footpath around the work area would be <50 m additional journey length as defined in Table 8.5. (using the worst case of the footpath being diverted along the edge of the Onshore ECC)	Negligible	**Minor adverse (not significant)**
FP7 180	Medium	Temporary crossing by VE construction traffic on an off-route haul road at a haul road crossing	The section of the footpath at the location of CR-5 would be temporarily diverted to avoid the crossing and off-route haul road. The temporary diverted footpath would be <50 m additional journey length as defined in Table 8.5.	Negligible	**Minor adverse (not significant**
FP 4 180	Medium	Temporary crossing by VE construction traffic on off-route haul road	The footpath would either: > kept open using managed crossings (see proposed management measures in Volume 9, Report 25: Outline PAMP) and temporarily diverted to install/remove the off-route haul road; or	Negligible	**Minor adverse (not significant**

PRoW	Sensitivity	Impact	Assessment	Magnitude of impact	Level of effect
			> temporarily diverted along the edge of the off-route haul road for the duration of the construction works. Any temporary diversion would be <50 m additional journey length as defined in Table 8.5.		
FP3 180	Medium	Temporary crossing by VE construction traffic on off-route haul road	The footpath would be kept open using a managed crossing and temporarily diverted to install/remove the off-route haul road (see proposed management measures in Volume 9, Report 25: Outline PAMP). Any temporary diversion would be <50 m additional journey length as defined in Table 8.5.	Negligible	**Minor adverse (not significant**
FP1 180	Medium	Temporary crossing by cable trenches and VE construction traffic on haul road	The footpath would be kept open using a managed crossing (see proposed management measures in Volume 9, Report 25: Outline PAMP) and temporarily diverted when the works are undertaken at this location (cable installation or installing/removing the haul road). Any temporary diversion would be <50 m additional journey length as defined in Table 8.5.	Negligible	**Minor adverse (not significant**
FP 18 159	Medium	Temporary crossing by cable trenches and VE construction	The route would be kept open using a gated crossing (see proposed management measures in Volume 9, Report 25: Outline PAMP) and temporarily diverted when the works are undertaken at this location (cable installation or installing/removing the haul road).	Negligible	**Minor adverse (not significant**

PRoW	Sensitivity	Impact	Assessment	Magnitude of impact	Level of effect
		traffic on haul road	The temporary diverted route around the work area would be <50 m additional journey length as set out in Table 8.5.		
FP18 180	Medium	Temporary crossing by cable trenches VE construction traffic on haul road and could be through TCC4	The section of the footpath within the Onshore ECC would be kept open using a gated crossing (see proposed management measures in Volume 9, Report 25: Outline PAMP) and temporarily diverted when the works are undertaken at this location. The temporary diverted route around the work area would be <50 m additional journey length. The section of the footpath that could be within TCC4, would need to be temporarily diverted around the extent of the TCC. The temporary diverted route around the TCC would be 50 to 250m additional journey length as defined in Table 8.5 (using the worst case of the footpath being diverted along the boundary with the B1035 Tendring Road)	Negligible to Low	**Minor adverse (not significant**

Table 8.38: Assessment of users of PRoW (Onshore ECC route section 4a)

PRoW	Sensitivity	Impact	Assessment	Magnitude of impact	Level of effect
FP22 179	Medium	Temporary crossing by VE construction traffic on off route haul road and uses track for operation and maintenance	The route would be kept open using a gated crossing (see proposed management measures in Volume 9, Report 25: Outline PAMP) and temporarily diverted when the works are undertaken at this location. Operation and maintenance track already used by vehicles. Driver training/awareness of the route shared with users of the PRoW.	Negligible	**Minor adverse (not significant**

Table 8.39: Assessment of users of PRoW (Onshore ECC route section 4b)

PRoW	Sensitivity	Impact	Assessment	Magnitude of impact	Level of effect
FP8 179	Medium	Temporary crossing by cable trenches, uses track for operation and maintenance and VE construction traffic on haul	The section of the footpath that would be crossed by cable tranches and haul road would be kept open using a gated crossing (see proposed management measures in Volume 9, Report 25: Outline PAMP) and temporarily diverted when the works are undertaken at this location (cable installation or installing/removing the haul road).	Negligible	**Minor adverse (not significant**

PRoW	Sensitivity	Impact	Assessment	Magnitude of impact	Level of effect
		road/off route haul road.	The section of the footpath that would be crossed by the off-route haul road would either be: > kept open using managed crossings (see proposed management measures in Volume 9, Report 25: Outline PAMP); or > temporarily diverted along the edge of the off-route haul road for the duration of the construction works. Any temporarily diverted footpath would be <50 m additional journey length as defined in Table 8.5. Operation and maintenance track already used by vehicles. Driver training/awareness of the route shared with users of the PRoW.		
FP3 179	Medium	Temporary crossing by cable trenches and VE construction traffic on haul road	The route would be kept open using a managed crossing (see proposed management measures in Volume 9, Report 25: Outline PAMP) and temporarily diverted when the works are undertaken at this location (cable installation or installing/removing the haul road). The temporary diverted route around the work area would be <50 m additional journey length as set out in Table 8.5.	Negligible	**Minor adverse (not significant**

PRoW	Sensitivity	Impact	Assessment	Magnitude of impact	Level of effect
FP1 179	Medium	Temporary crossing by cable trenches and VE construction traffic on haul road	The route would be kept open using a managed crossing (see proposed management measures in Volume 9, Report 25: Outline PAMP) and temporarily diverted when the works are undertaken at this location (cable installation or installing/removing the haul road). The temporary diverted route around the work area would be <50 m additional journey length as set out in Table 8.5. Operation and maintenance track already used by vehicles. Driver training/awareness of the route shared with users of the PRoW.	Negligible	**Minor adverse (not significant**
FP31 183 FP32 183	Medium	Temporary crossing by cable trenches and VE construction traffic on haul road	The route would be kept open using a managed crossing (see proposed management measures in Volume 9, Report 25: Outline PAMP) and temporarily diverted when the works are undertaken at this location (cable installation or installing/removing the haul road). The temporary diverted route around the work area would be <50 m additional journey length as defined in Table 8.5.	Negligible	**Minor adverse (not significant**

PRoW	Sensitivity	Impact	Assessment	Magnitude of impact	Level of effect
FP37 183	Medium	Temporary VE construction traffic using AC-6	A segregated footpath has been incorporated into the design of AC-6. Appropriate warning signage would be provided. No temporary closure or diversion would be required	Negligible	**Minor adverse (not significant**
183_15	Medium	Temporary crossing of VE construction traffic on off-route haul road	The route would be kept open using a managed crossing (see proposed management measures in Volume 9, Report 25: Outline PAMP) and temporarily diverted when the off-route haul road is installed/removed.	Negligible	**Minor adverse (not significant**

Table 8.40: Assessment of users of PRoW (ECC route section 6)

PRoW	Sensitivity	Impact	Assessment	Magnitude of impact	Level of effect
FP17 172	Medium	Temporary crossing by cable trenches and VE construction traffic on haul road	The footpath would be kept open using a managed crossing (see proposed management measures in Volume 9, Report 25: Outline PAMP) and temporarily diverted when the works	Negligible	**Minor adverse (not significant**

PRoW	Sensitivity	Impact	Assessment	Magnitude of impact	Level of effect
FP16 172	Medium	and OnSS access road.	are undertaken at this location ((cable installation or installing/removing the haul road). The temporary diverted route around the work area would be <50 m additional journey length as defined in Table 8.5.	Negligible	**Minor adverse (not significant**
FP15 172	Medium	Temporary crossing of indicative NF OWF TCC	The footpath would be diverted around the edge of the TCC for the duration of the construction period. The temporary diverted footpath around the TCC could be between 50 and 200 m additional journey length as defined in Table 8.5. (based on the worst case of around the edge of the indicative TCC area)	Low	

8.10.4 Based on the analysis in Table 8.36 to Table 8.40 the temporary adverse effects on users of PRoW would be **negligible or minor** in significance, which is **not significant** in terms of the EIA Regulations.

ABNORMAL INDIVISIBLE LOADS (AILS)

8.10.5 The construction of the onshore works will require the delivery of a number of AILs. These are expected to comprise transformers and reactors for the proposed OnSS.

8.10.6 An initial assessment of the anticipated route for the AIL deliveries (between the Harwich International Port and the substation temporary haul road from Bentley Road to Ardleigh Road has been undertaken to inform the DCO application.

8.10.7 The assumed route is:

- Harwich International Port;
- Parkeston Bypass;
- St Nicholas Roundabout onto the A120;
- Parkeston Roundabout on the A120;
- A new roundabout on the A120 to be constructed to accommodate a new development;
- B1352 Roundabout on the A120;
- B1035 Horsley Cross Roundabout on the A120; and
- Bentley Road.

8.10.8 In terms of an initial assessment, a swept path analysis of the A120 Bentley Road junction has been undertaken, which shows the transformer delivery vehicle would need to turn into Bentley Road from the A120 east via a contraflow using the eastbound carriageway for a section of around 200m (see Appendix Y of Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2.)

8.10.9 No modifications to the junction (other than those proposed for standard construction HGVs) would be required.

8.10.10 Whilst the above proposal has been agreed in principle by NH, additional options may be considered during the detailed design stage, should the DC) be approved.

8.10.11 Once the specific transportation vehicles have been confirmed, an Abnormal Load Assessment Report (ALAR) will be prepared by the Contractor which will set out the key points and issues associated with the selected route for the AILs, to verify that the route is feasible for the delivery, subject to physical and operational mitigation works. The ALAR will inform the traffic management measures that will need to be identified for the movement of the AIL – see Volume 9, Report 24: Outline CTMP.

8.10.12 The following would need to be adhered to for AIL deliveries:

- All temporary works, such as removal of street furniture, will be subject to discussion with Essex County Council and form part of a delivery plan for each AIL;

- Prior to the movement of AILs, public awareness is required to allow residents to plan and time their journeys to avoid disruption;
- 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; local residents along the route will be informed when the AILs are travelling along the route to ensure that interaction between the local community and AIL delivery vehicles is minimised;
- Due to the size of vehicles required to transport these loads, escorts may be required for the entire route to control oncoming and conflicting traffic.
- AIL vehicles will be accompanied by escort vehicles. The escort vehicles are in place to provide manoeuvring assistance, warning of hazards and to report information on clearances etc to the drivers of the AIL vehicles; and
- If a road closure is required, arrangements will be put in place to facilitate local access to properties on the closed route and to ensure safe passage of any emergency vehicles which may require access.

8.10.13 To further improve driver information, NH will be approached as operators of Variable Message Signs on the trunk road network to investigate whether existing signs could be used to warn drivers of AILs and to warn them of potential delays.

8.10.14 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).

8.10.15 Given the above measures, it is considered the resulting adverse effect would be **negligible** in significance which is **not significant** in terms of the EIA Regulations.

8.11 ENVIRONMENTAL ASSESSMENT: DECOMMISSIONING PHASE

8.11.1 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 which have been assessed in Section 8.10. 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.

8.11.2 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 VE, and adapt to local sensitivities, policy, and legalisation.

8.11.3 The decommissioning methodology would be finalised nearer to the end of the lifetime of VE, to be in line with current guidance, policy and legislation. Any such methodology would be agreed with the relevant authorities and statutory consultees.

8.12 ENVIRONMENTAL ASSESSMENT: CUMULATIVE EFFECTS

SCOPE AND APPROACH OF ASSESSMENT

8.12.0 The cumulative effects assessment (CEA) as set out in this chapter has been undertaken in accordance with the methodology provided in Volume 1, Annex 3.1: Cumulative Effects Assessment Methodology.

8.12.1 The forecast VE vehicle movements (minimum, maximum and average) to and from each Onshore ECC Route Section, OnSS and 400kV connection for Scenario 2 are summarised in Table 8.41.

8.12.2 The forecast VE vehicle movements on each highway link used in the assessment have been derived from the maximum figures in Table 8.41.

Table 8.41 Minimum, maximum and average daily traffic generation (two way movements) estimates (Scenario 2)

Route Section	Total vehicles			HGVs			Employee vehicles (car occupancy 1.5)		
	Min	Max	Av.	Min	Max	Av.	Min	Max	Av.
Section 1 (incl. Landfall HDD compound)	67	150	117	28	69	50	35	101	67
Section 2	0	80	47	0	33	15	0	56	33
Section 3	63	151	98	25	65	43	34	97	56
Section 4a	0	92	43	0	41	14	0	59	28
Section 4b	44	131	83	10	59	35	34	90	48
Section 5	0	114	66	0	58	26	0	71	40
Section 6/7	37	141	91	3	90	41	24	78	50
OnSS and unlicensed works	37	334	166	9	133	58	27	201	108
400kV works	0	74	18	0	18	5	0	56	13

Route Section	Total vehicles			HGVs			Employee vehicles (car occupancy 1.5)		
	Min	Max	Av.	Min	Max	Av.	Min	Max	Av.
Beach access to support landfall works	0	92	12	0	39	5	0	53	9

8.12.3 The projects and plans selected as relevant to the assessment of impacts to onshore Traffic and Transport are based upon an initial screening exercise undertaken on a long list. Each project, plan or activity has been considered and scoped in or out on the basis of effect–receptor pathway, data confidence and the temporal and spatial scales involved. For the purposes of assessing the impact of the VE on onshore Traffic and Transport in the region, the cumulative effect assessment technical note submitted through the EIA Evidence Plan and forming Technical Annex 1.3.1 of this ES screened in a number of projects and plans.

8.12.4 In assessing the potential cumulative impacts for VE, it is important to bear in mind that projects, predominantly currently 'proposed' may or may not be, ultimately taken forward for development. To build in some consideration of certainty (or uncertainty) the projects and plans were allocated into 'Tiers' reflecting their current status within the planning and development process. They are outlined here in Table 8.43.

8.12.5 Projects and plans were scoped in based on the following criteria:

- 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
- Any development that was not required to prepare a Transport Statement or Transport Assessment to support the planning application.

Table 8.42: Description of Tiers of other developments considered for cumulative effect assessment.

Tiers	Development Stage
Tier 1	Projects under construction.
	Permitted applications, whether under the Planning Act 2008 or other regimes, but not yet implemented.
	Submitted applications, whether under the Planning Act 2008 or other regimes, but not yet determined.
Tier 2	Projects on the Planning Inspectorate's Programme of Projects where a Scoping Report has been submitted.
	Projects under the Planning Act 2008 where a PEIR has been submitted for consultation.
Tier 3	Projects on the Planning Inspectorate's Programme of Projects where a Scoping Report has not been submitted.
	Identified in the relevant Development Plan (and emerging Development Plans with appropriate weight being given as they move closer to adoption) recognising that much information on any relevant proposals will be limited.
	Identified in other plans and programmes (as appropriate) which set the framework for future development consents/approvals, where such development is reasonably likely to come forward.

Table 8.43: Projects considered within the Onshore Traffic and Transport cumulative effect assessment.

Development type	Project	Status	Data confidence assessment/phase	Tier
Offshore Wind Farm	NF OWF	Pre-consent	High- application to be submitted in 2024	Tier 2
Nuclear Power	EN010012 Sizewell C	Approved	High	Tier 1
Offshore Wind Farm	EN010078 East Anglia Two (EA TWO) Offshore Wind Farm	Approved	High	Tier 1
Electricity Transmission	Norwich to Tilbury Reinforcement Project and EACN Substation	Pre-consent	Medium- application to be submitted in 2025	Tier 2
Mixed use development	19/00524/OUT Mixed development including 280 dwellings, a two form of entry primary school, 56 place early years nursery, up to 3,000 sqm of office (B1) buildings on Land to The South of Thorpe Road Weeley Essex CO16 9AJ;	Approved	High	Tier 1
Battery Energy Storage	21/02070/FUL 50MW battery energy storage system on land adjacent to Lawford Grid	Approved	High	Tier 1

Development type	Project	Status	Data confidence assessment/phase	Tier
	Substation, Ardleigh Road Little Bromley Essex CO11 2QB			
Residential	20/00179/FUL Residential development to provide 50 dwellings at land at Oakwood Park;	Approved	High	Tier 1
Residential	20/01130/FUL Residential development to provide 122 dwellings on land South of Centenary Way and west of Thorpe Road, Clacton on Sea Essex CO15 4QD; and	Approved	High	Tier 1
Container Port	23/01594/FUL Reclamation of Bathside Bay and development to provide an operational container port, Bathside Bay Stour Road Harwich Essex CO12 3HF.	Submitted	High	Tier 1

VE AND NF OWF COORDINATED APPROACH

8.12.6 In accordance with the provisions of NPS EN-5 to seek to develop co-ordination solutions for onshore grid connections, VE has been working with North Falls on a co-ordinated solution to reduce the overall environmental and community impacts of the proposals. The project includes almost fully overlapping or combined Onshore ECCs and a co-located site for the OnSS to the west of Little Bromley. It is proposed the two projects' ducts will be installed adjacent to each other within the corridor. The level of co-ordination between the two projects has led to a higher degree of understanding and interactions with the North Falls proposals which can be used within the CEA than would be normal for other developments at a similar stage in the planning process.

8.12.7 Due to the independent timescales for each project, three delivery scenarios have been developed (details of each scenario can be found within Volume 3, Chapter 1: Onshore Project Description). For the purposes of the cumulative assessment of VE and North Falls, the worst-case delivery scenario (Scenario 1 with NF OWF installing its cables at the same time as VE) has been assumed.

8.12.8 Delivery Scenario 2, as described in Paragraph 8.5.5 would result in overlapping VE and NF OWF construction vehicle movements, with the impact on the highway network in terms of maximum daily construction vehicle movements no greater than when both projects install cables at the same time, as set out in paragraph 8.12.7.

8.12.9 A set of construction vehicle movements has been derived on the basis of VE and NF OWF being constructed at the same under the coordinated approach i.e. Scenario 1, as provided in Appendix T of Volume 6, Part 6, Annex 8.1: Transport Assessment – Part 1 and Volume 6, Part 6, Annex 8.2: Transport Assessment – Part 2. The data has been broken down for VE as the first project and NF OWF as the second project.

TREATMENT OF EACH DEVELOPMENT

NORWICH TO TILBURY REINFORCEMENT PROJECT

8.12.10 In order for VE to connect to the National Grid, the proposed National Grid Norwich to Tilbury Reinforcement Project and the associated EACN substation must be operational. National Grid has defined a construction and operational zone within which their EACN substation will be situated. This is adjacent to the VE OnSS zone.

8.12.11 Despite its stage in the planning process, due to VE's reliance on this project for its connection to the National Grid, it has been given detailed consideration and treated with more certainty than other projects at similar stage in the planning process in the CEA. To assist with the assessment, it has been necessary to make assumptions as to the siting, scale, form and construction of the project, particularly the EACN substation. These assumptions have been checked and agreed to be appropriate and reasonable by National Grid. For the purposes of the cumulative assessment of VE and National Grid Norwich to Tilbury Project, the worst-case delivery scenario, with limited co-ordination has been assessed for the direct and indirect impacts.

8.12.12 National Grid is currently preparing a DCO application for the proposed EACN Substation and therefore confirmed construction vehicle movement information is not yet available.

8.12.13 The Applicant has been liaising with National Grid (in collaboration with NF OWF) throughout the preparation of the VE DCO application as the EACN Substation proposal develops, since there is the potential for significant Traffic and Transport effects on the construction access routes that would be shared with VE (and NF OWF) should there be any overlap with the respective construction programmes of each project.

8.12.14 These are assumed to be:

- A12 J29;
- A120 between J29 and the B1035 Horsley Cross roundabout;
- Bentley Road.

8.12.15 To inform the cumulative Traffic and Transport assessment, National Grid has provided some indicative HGV and construction workforce vehicle movements (typical vehicle movements across the construction programme, as it is unlikely that peak periods of construction activity for VE and the proposed EACN Substation would occur at the same time.

OTHER NSIPS

8.12.16 Forecast vehicle movements associated with the construction of Sizewell C and the onshore elements of EA TWO Offshore Wind Farm have been added to the A12 only and has been derived from the Transport Assessments prepared by Battery Energy Storage EDF Energy and RHDHV, respectively).

BATTERY ENERGY STORAGE SCHEME

8.12.17 Forecast vehicle movements associated with the Battery energy Storage Scheme (BESS) have been derived from the CTMP prepared by Ethical Power Connections Ltd, which was submitted with the planning application and assigned to the highway network based on the proposed routeing arrangements.

GREEN ENERGY HUB, BATHSIDE BAY

8.12.18 Forecast daily vehicle movements associated with the proposed Green Energy Hub at Bathside Bay Container Port have been taken from the Transport Assessment prepared by RHDHV that has been submitted with the planning application. For a robust assessment on the SRN, 100% of the forecast vehicle movements have been assigned to the A120.

OTHER COMMITTED DEVELOPMENTS – RESIDENTIAL/OFFICE

8.12.19 The forecast traffic flows associated with the consented developments identified in Table 8.43 have been derived using the morning and evening peak hour vehicle movements set out in the Transport Assessment prepared for each of the planning applications and factored for 24-hour flows, using factors derived from the TRICS database (used to quantify the trip generation of new developments), as follows:

- Residential use – 4.85; and

- Office use - 3.75.

8.12.20 Where the assignment of the forecast vehicle movements does not extend to the edge of the VE Traffic and Transport study area, reasonable assumptions have been made to assign the vehicle movements to the study area extents, which results in a robust analysis of cumulative vehicle movements on the A133, A120 and A12.

NOTABLE SCHEMES SCOPED OUT OF THE ASSESSMENT

CENTURION PARK, HORSLEY CROSS

8.12.21 The exception to the project that will generate vehicle movements on the A120 and B1035 (north and south of the A120) that has been scoped out, is the Centurion Park, Horsley Cross (19/01706/OUT) as whilst the Transport Assessment provides forecast vehicle movements in the morning and peak hours, due to the various elements of the project, shift times and types of vehicle movement, it would be difficult to reasonably estimate the daily trip generation for use in the CEA..

8.12.22 Also, due to the 100% assignment of VE construction HGVs sensitivity test on the A120 east of and at the B1035 Horsley Cross Roundabout and other robust assignment assumptions on the A120, including potentially inaccurate daily trip generation for 19/01706/OUT on the A120 with the likely over inflated cumulative vehicle movements would not be appropriate and unrealistic.

8.12.23 Finally, on the B1035 Clacton Road, the cumulative impact for total vehicles is 1.1%, which is significantly below the 30% threshold for formal assessment, which would not change with the likely daily workforce vehicles associated with 19/01706/OUT that would use this highway link.

TENDRING COLCHESTER BORDERS GARDEN COMMUNITY (TCBGC)

8.12.24 Changes in traffic flows associated with the Tendring Borders Garden Community (TCBGC) would be captured within TEMPRO growth factors that have been applied to the baseline traffic flows on the highway network within the Traffic and Transport study area and therefore no consideration of this proposal has been considered in the Traffic and Transport CEA.

A120 HORSLEY CROSS TO WIX CONCRETE ROAD RECONSTRUCTION

8.12.25 At a Traffic and Transport ETG on the 16th January 2024, NH identified a reconstruction scheme on the A12 between Horsley Cross and Wix, which could be undertaken during the anticipated construction period for VE. This scheme has not been considered in the CEA, since there are no dates on the NH website setting out high level details of the scheme.

8.12.26 Further discussions between the Applicant and NH would be required should there be any overlap of the reconstruction scheme and the construction of VE. This would be particularly related to the timing of the delivery of the AILs, which would be the main vehicle movements associated with the construction of VE that would use the A120 between Horsley Cross and Wix.

CUMULATIVE VEHICLE MOVEMENTS

8.12.27 The vehicle movements associated with each of the NSIPs for the cumulative Traffic and Transport assessment are shown in Table 8.44.

8.12.28 The vehicle movements associated with each of the other developments for the cumulative Traffic and Transport assessment are shown in Table 8.45.

8.12.29 The cumulative impact assessment showing the forecast percentage impacts on 2027 baseline traffic flow is provided in Table 8.46.

Table 8.44: Cumulative daily two-way vehicle movements - NSIPs

Link ID	Highway link	NF OWF		EACN		Sizewell		EA TWO		Total	
		Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs
1	A12 (N)	134	109	90	64	675	500	357	210	1,255	883
2	A12 (S)	133	109	90	64	675	500	357	210	1,254	883
6	A12 (N) off slip at J29 Roundabout	40	27	45	32					85	59
7	A12 (N) on slip at J29 Roundabout	39	27	45	32					84	59
8	A120 (E) off slip at J29 Roundabout	52	27	45	32					97	59
9	A120 (E) on slip at J29 Roundabout	50	27	45	32					95	59
10	A120 between J29 and A133	263	216	179	128					442	344
11	A120 (A133 to Harwich Road)	234	216	179	128					413	344
12	A120 (Harwich Road to Bentley Road)	275	216	179	128					454	344
13	A120 (Bentley Road to B1035)	271	216	179	128					450	344
14	A120 (East of B1035)	26								26	
15	A120 at Harwich	25								25	
16	A133 (A120 to A133 Main Road)	135	63							135	63
17	A133 (A133 Main Road to B1033)	76	63							76	63

Link ID	Highway link	NF OWF		EACN		Sizewell		EA TWO		Total	
		Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs
18	A133 (B1033 to B1027)	135	63							135	63
19	A133 Clacton Road (Elmstead Market)	13								13	
20	A133 Main Road	28								28	
21	B1027 St John's Road (west of Clacton)	31								31	
22	B1027 Colchester Road (St Osyth Park)	12								12	
23	B1027 Valley Road (Clacton)	83	40							83	40
24	B1032 Frinton Road	141	40							141	40
25	B1032 Clacton Road	147	40							147	40
26	B1033 Colchester Road (west of B1441)	74	20							74	20
27	B1441 Clacton Road	46	11							46	11
28	B1414 Harwich Road	47	11							47	11
29	B1033 Frinton Road	61	11							61	11
30	B1033 Colchester Road	34	9							34	9

Link ID	Highway link	NF OWF		EACN		Sizewell		EA TWO		Total	
		Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs
	(east of B1441)										
31	B1035 Tendring Road	59	9							59	9
32	B1035 Thorpe Road	36	2							40	2
33	B1035 south of A120	57	13							57	13
34	B1035 Clacton Road	21	1							22	1
35	Bentley Road	337	247	179	128					516	375
44	B1029 (north of Harwich Road)	158								158	
45	Waterhouse Lane	158								158	

Table 8.45: Cumulative daily two-way vehicle movements - other developments

Link ID	Highway link	Bathside Bay 23/01594/FUL		21/02070/FUL		19/00524/OUT		20/00179/FUL	20/01330/FUL	Total	
		Total	HGVs	Total	HGVs	Total	HGVs	Total	Total	Total	HGVs
1	A12 (N)	121	54	15	10	386		78	121	721	64
2	A12 (S)	121	54	15	10	386		78		721	64
6	A12 (N) off slip at J29 Roundabout	60	27							60	27
7	A12 (N) on slip at J29 Roundabout	60	27							60	27
8	A120 (E) off slip at J29 Roundabout	60	27							60	27
9	A120 (E) on slip at J29 Roundabout	60	27							241	108
10	A120 (J29 to A133)	241	108	30	20		155		243	669	128
11	A120 (A133 to Harwich Road)	241	108	30	20					271	128
12	A120 (Harwich Road to Bentley Road)	241	108							241	108
13	A120 (Bentley Road to B1035)	241	108							241	108
14	A120 (East of B1035)	241	108							241	108
15	A120 at Harwich	302	108							302	108

Link ID	Highway link	Bathside Bay 23/01594/FUL		21/02070/FUL		19/00524/OUT		20/00179/FUL	20/01330/FUL	Total	
		Total	HGVs	Total	HGVs	Total	HGVs	Total	Total	Total	HGVs
16	A133 (A120 to A133 Main Road)							155	243	398	
17	A133 (A133 Main Road to B1033)					772		155	243	1,170	
18	A133 (B1033 to B1027)					786				786	
26	B1033 Colchester Road (west of B1441)					2,163				2163	
27	B1441 Clacton Road					400				400	
30	B1033 Colchester Road (east of B1441)					400				400	

Table 8.46: Cumulative assessment

Link ID	Location	2027		VE		NSIPs + other developments		2027 + VE NSIPs + other developments		Percentage Increase (%)	
		Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs
1	A12 (N)	66,979	6,347	390	240	1976	947	69,287	7,492	3.5	18.7
2	A12 (S)	77,966	6,490	384	240	1975	947	80,267	7,634	3.0	18.3
6	A12 (N) off slip at J29 Roundabout	13,305	1,304	196	120	67	54	13,532	1,450	2.0	13.3
7	A12 (N) on slip at J29 Roundabout	9,812	1,190	135	60	144	86	10,069	1,322	2.8	12.3
8	A120 (E) off slip at J29 Roundabout	7,735	734	232	85	165	94	8,101	891	5.1	24.4
9	A120 (E) on slip at J29 Roundabout	9,061	895	232	85	163	94	9,416	1,052	4.4	20.0
10	A120 (J29 to A133)	49,273	2,988	968	673	1174	535	51,209	4,028	4.3	40.4
11	A120 (A133 to Harwich Road)	13,630	1,560	685	479	684	472	14,880	2,400	10.0	61.0
12	A120 (Harwich Road to Bentley Road)	13,804	1,665	1026	479	695	452	15,374	2,486	12.5	55.9
13	A120 (Bentley Road to B1035)	13,978	1,770	995	479	692	452	15,522	2,591	12.1	52.6
14	A120 (East of B1035)	16,426	1,955	634	479	484	324	17,421	2,647	6.8	41.1
15	A120 at Harwich	11,230	1,784	634	479	544	324	12,279	2,476	10.5	45.0

Link ID	Location	2027		VE		NSIPs + other developments		2027 + VE NSIPs + other developments		Percentage Increase (%)	
		Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs
16	A133 (A120 to A133 Main Road)	23,952	757	548	194	533	63	24,921	957	4.5	33.9
17	A133 (A133 Main Road to B1033)	33,772	1,246	290	194	1,246	63	35,241	1,446	4.5	20.6
18	A133 (B1033 to B1027)	22,589	599	527	194	921	63	23,924	798	6.4	42.9
19	A133 Clacton Road (Elmstead Market)	10,351	246	89	0	13	0	10,445	246	1.0	0.0
20	A133 Main Road	12,984	649	140	0	28	0	13,131	649	1.3	0.0
21	B1027 St John's Road (west of Clacton)	16,707	149	99	0	31	0	16,808	149	0.8	0.0
22	B1027 Colchester Road (St Osyth Park)	12,049	170	29	0	12	0	12,078	170	0.3	0.0
23	B1027 Valley Road (Clacton)	14,523	226	233	108	83	40	14,761	337	2.2	65.5
24	B1032 Frinton Road	7,550	146	372	108	141	40	7,930	257	6.8	101.4
25	B1032 Clacton Road	7,251	127	376	108	147	40	7,634	238	7.2	116.5
26	B1033 Colchester Road (west of B1441)	14,980	309	368	159	2,237	20	17,514	468	17.4	57.9

Link ID	Location	2027		VE		NSIPs + other developments		2027 + VE NSIPs + other developments		Percentage Increase (%)	
		Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs
27	B1441 Clacton Road	5,955	153	188	77	446	11	6,544	229	10.6	57.5
28	B1414 Harwich Road	5,561	120	189	77	47	11	5,751	196	4.2	73.3
29	B1033 Frinton Road	12,277	225	249	77	61	11	12,528	301	2.5	39.1
30	B1033 Colchester Road (east of B1441)	10,041	245	204	83	434	9	10,648	328	6.4	37.6
31	B1035 Tendring Road	1,576	43	316	83	59	9	1,898	126	23.8	214.0
32	B1035 Thorpe Road	2,275	52	226	39	36	2	2,506	93	11.5	78.8
33	B1035 south of A120	5,594	138	278	72	57	13	5,882	210	6.0	61.6
34	B1035 Clacton Road	8,393	206	71	29	21	1	8,467	236	1.1	14.6
35	Bentley Road	946	30	661	212	516	375	2,123	617	224.4	2,056
44	B1029 (north of Harwich Road)	2,240	50	158	0	158	0	2,555	0	12.4	0.0
45	Waterhouse Lane	428	13	158	0	158	0	744	0	73.9	0.0

Table 8.47: Maximum cumulative trip generation percentage impacts

Link ID	Highway link	Percentage impact		Sensitivity	Threshold (%)		Formal assessment?
		Total	HGV		Total	HGV	
1	A12 (N)	3.5	18.7	Negligible	30	30	No
2	A12 (S)	3.0	18.3	Negligible	30	30	No
6	A12 (N) off-slip at J29 Roundabout	2.8	17.2	Negligible	30	30	No
7	A12 (N) on-slip at J29 Roundabout	2.8	12.3	Negligible	30	30	No
8	A120 (E) off-slip at J29 Roundabout	5.1	24.4	Negligible	30	30	No
9	A120 (E) on-slip at J29 Roundabout	4.4	20.0	Negligible	30	30	No
10	A120 (J29 to A133)	4.3	40.4	Negligible	30	30	No
11	A120 (A133 to Harwich Road)	10.0	61.0	Negligible	30	30	Yes
12	A120 (Harwich Road to Bentley Road)	12.5	55.9	Negligible	30	30	Yes
13	A120 (Bentley Road to B1035)	12.1	52.6	Negligible	30	30	Yes
14	A120 (East of B1035)	6.8	41.1	Negligible	30	30	Yes
15	A120 at Harwich	10.5	45.0	Negligible	30	30	Yes
16	A133 (A120 to A133 Main Road)	4.5	33.9	Low	30	30	Yes
17	A133 (A133 Main Road to B1033)	4.5	20.6	Low	30	30	No
18	A133 (B1033 to B1027)	6.4	42.9	Low	30	30	Yes
19	A133 Clacton Road (Elmstead Market)	1.0	0.0	Low	30	30	No
20	A133 Main Road	1.3	0.0	Low	30	30	No

Link ID	Highway link	Percentage impact		Sensitivity	Threshold (%)		Formal assessment?
		Total	HGV		Total	HGV	
21	B1027 St John's Road (west of Clacton)	0.8	0.0	Low	30	30	No
22	B1027 Colchester Road (St Osyth Park)	0.3	0.0	Low	30	30	No
23	B1027 Valley Road (Clacton)	2.2	65.5	High	10	30	Yes
24	B1032 Frinton Road	6.8	101.4	High	10	30	Yes
25	B1032 Clacton Road	7.2	116.5	Low	30	30	Yes
26	B1033 Colchester Road (west of B1441)	17.4	57.9	Medium	10	30	Yes
27	B1441 Clacton Road	10.6	57.5	High	10	30	Yes
28	B1414 Harwich Road	4.2	73.3	Medium	10	30	Yes
29	B1033 Frinton Road	2.5	39.1	High	10	30	Yes
30	B1033 Colchester Road (east of B1441)	6.4	37.6	High	10	30	Yes
31	B1035 Tendring Road	23.8	214.0	Medium	10	30	Yes
32	B1035 Thorpe Road	11.5	78.8	Low	30	30	Yes
33	B1035 south of A120	6.0	61.6	Negligible	30	30	Yes
34	B1035 Clacton Road	1.1	14.6	Low	30	30	No
35	Bentley Road	224.4	2,056	Low	30	30	Yes
44	B1029 (north of Harwich Road)	12.4	0.0	Medium	10	30	Yes
45	Waterhouse Lane	73.9	0.0	High	10	30	Yes

8.12.30 Based on Table 8.47, the highway links taken forward for the cumulative assessment are shown in Table 8.48.

Table 8.48: Highway links taken forward for the cumulative assessment

Link ID	Highway link	Percentage impact		Sensitivity
		Total	HGV	
11	A120 (J29 to A133)	10.0	61.0	Negligible
12	A120 (A133 to Harwich Road)	12.5	55.9	Negligible
13	A120 (Harwich Road to Bentley Road)	12.1	52.6	Negligible
14	A120 (East of B1035)	6.8	41.1	Negligible
15	A120 at Harwich	10.5	45.0	Negligible
16	A133 (A120 to A133 Main Road)	4.5	33.9	Low
18	A133 (B1033 to B1027)	6.4	42.9	Low
23	B1027 Valley Road (Clacton)	2.2	65.5	High
24	B1032 Frinton Road	6.8	101.4	High
25	B1032 Clacton Road	7.2	116.5	Low
26	B1033 Colchester Road (west of B1441)	17.4	57.9	Medium
27	B1441 Clacton Road	10.6	57.5	High
28	B1414 Harwich Road	4.2	73.3	Medium
29	B1033 Frinton Road	2.5	39.1	High
30	B1033 Colchester Road (east of B1441)	6.4	37.6	High
31	B1035 Tendring Road	23.8	214.0	Medium
32	B1035 Thorpe Road	11.5	78.8	Low
33	B1035 south of A120	6.0	61.6	Negligible
35	Bentley Road	224.4	2,056	Low
44	B1029 (north of Harwich Road)	12.4	0.0	Medium
45	Waterhouse Lane	73.9	0.0	High

COMMUNITY SEVERANCE

8.12.31 In Table 8.5 less than a 10% increase in total traffic is considered a negligible magnitude of impact of the potential effect of community severance. Table 8.49 summarises the level of effects on these links with a negligible magnitude of impact:

Table 8.49: Highway links - negligible magnitude of impact (community severance) – cumulative assessment

Link ID	Highway link	Sensitivity	Level of effect
14	A120 (East of B1035)	Negligible	Negligible
16	A133 (A120 to A133 Main Road)	Low	Negligible
18	A133 (B1033 to B1027)	Low	Negligible
23	B1027 Valley Road (Clacton)	High	Minor
24	B1032 Frinton Road	High	Minor
25	B1032 Clacton Road	Low	Negligible
28	B1414 Harwich Road	Medium	Minor
29	B1033 Frinton Road	High	Minor
30	B1033 Colchester Road (east of B1441)	High	Minor
33	B1035 south of A120	Negligible	Negligible

8.12.32 In summary, with the addition of the cumulative projects, there would be a negligible or minor adverse effect on community severance on all the highway links in Table 8.49, which is not significant in terms of the EIA Regulations.

8.12.33 Table 8.50 summarises the level of effects on these links with a low magnitude of impact (10% to 30%).

Table 8.50: Highway links – low magnitude of impact (community severance) – cumulative assessment

Link ID	Highway link	Sensitivity	Level of effect
11	A120 (J29 to A133)	Negligible	Negligible
12	A120 (A133 to Harwich Road)	Negligible	Negligible
13	A120 (Harwich Road to Bentley Road)	Negligible	Negligible
15	A120 at Harwich	Negligible	Negligible
26	B1033 Colchester Road (west of B1441)	Medium	Minor
27	B1441 Clacton Road	High	Moderate
31	B1035 Tendring Road	Medium	Minor
32	B1035 Thorpe Road	Low	Minor
44	B1029 (north of Harwich Road)	Medium	Minor

8.12.34 In summary, with the addition of the cumulative projects, there would be a **negligible** or **minor** adverse effect on community severance on the A120 (highway links 11, 12, 13 and 15), the B1033 (west of the B1441), the B1035 Tendring Road and B1035 Thorpe Road, as shown in Table 8.50, which is **not significant** in terms of the EIA Regulations.

8.12.35 For the B1441 Clacton Road, a **moderate** adverse level of effect on community severance is forecast with the addition of the cumulative projects, which is **significant** in terms of the EIA Regulations. However, given the 10% threshold is marginally breached (10.6%) and taking into account the potential alterative routeing of NF OWF construction vehicle movements between the A133 and Route Section 3 (which would avoid the B1441 Clacton Road), the magnitude of impact can be reduced to **negligible** adverse and therefore resulting in level of effect that is minor and **not significant** in terms of the EIA Regulations.

8.12.36 For Bentley Road, whilst the additional total daily vehicle movements in the cumulative assessment (with NF OWF and EACN) are forecast to approximately increase by a factor of 1.7 from Scenario 1, the construction of VE (including NF OWF ducts) forecast vehicle movements, the analysis of community severance set out in paragraphs 8.10.33 and 8.10.34 would still be relevant, particularly with the potential segregated WCH path on Bentley Road, the requirement for which would be discussed and agreed with Essex County Council.

8.12.37 Notwithstanding the above, it is acknowledged that, given the current vehicle movements on Bentley Road (particularly the very low number of HGVs), the changes in traffic movements will be discernible for the residents of the properties along this section of Bentley Road and consequently the DCO Application will be supported by a Construction Traffic Management Plan (CTMP) and a Workforce Travel Plan (WTP), that will include measures to further reduce peak in construction vehicle movements, such as:

- Coordination between projects to reduce the maximum daily construction vehicle movements, wherever practicable; and
- Use of satellite car parks (either at a remote location or TCCs that do not require using Bentley Road and a shuttle bus service for the construction workforce.

8.12.38 The Principal Contractor will therefore be required to implement additional measures as part of the final CTMP and final WTP reduce the forecast numbers of peak construction traffic movements along Bentley Road.

8.12.39 Based on the above, there would be a **minor** adverse effect, which is **not significant** in terms of the EIA Regulations.

8.12.40 Whilst the forecast cumulative vehicle movements (workforce vehicle movements to the VE and NF OWF OnSS TCCs) on Waterhouse Lane (including Little Bromley Road/Ardleigh Road)) would be double the Scenario 1 vehicle movements, given the very low baseline traffic flows, the magnitude of impact can still be considered low. With the medium sensitivity (as set out in paragraph 8.10.32), the adverse effect would be **minor significance,** which is not **significant** in terms of the EIA Regulations.

VULNERABLE ROAD USERS AND ROAD SAFETY

8.12.41 In Table 8.5 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 links is the same as for community severance set out in Table 8.49. 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 8.49., which is **not significant** in terms of the EIA Regulations.

The highway links forecast to increase by greater than 10% with the addition of the cumulative projects are shown in Table 8.51, with a qualitative assessment of the accident records, as required by Table 8.5.

Table 8.51: Assessment of cumulative effects on vulnerable road users and road safety

Link ID	Highway link	Percentage impact	Sensitivity	Assessment
11	A120 (J29 to A133)	10.0	Negligible	As the A120 is part of the SRN carrying high volumes of vehicles including a high proportion of HGVs, there are unlikely to be many cyclists. Additionally, there are unlikely to be many pedestrian movements across the A120, with the exception of at the B1352 roundabout in the vicinity of the settlement of Ramsey, where there are informal crossings. There are also informal crossings at the junction with Bentley Road and at the Harwich Road Roundabout, where pedestrian movements are likely to be limited. These crossings are also shared paths for cyclists. There have been five PIAs in the assessment period that involved a cyclist, two slight and three serious in severity and all occurred at different locations; however, three occurred at an approach to or on the circulating carriageway of the Parkeston Roundabout. Given the very robust assessment with the sensitivity of 100% HGVs arriving from and departing to Harwich, given the cumulative increase in total traffic is only marginally above the 10% threshold, the magnitude of impact can be considered low adverse and with the mitigation including Volume 9, Report 24: Outline CTMP, which would result in a **negligible** adverse effect which is **not significant** in terms of the EIA Regulations.
12	A120 (A133 to Harwich Road)	12.5	Negligible	
13	A120 (Harwich Road to Bentley Road)	12.1	Negligible	
15	A120 at Harwich	11.5	Negligible	

Link ID	Highway link	Percentage impact	Sensitivity	Assessment
26	B1033 Colchester Road (west of B1441)	17.4	Medium	An analysis of the B1033 (west of the B1441) includes the A133/B1033 and B1033/B1441 roundabouts. Five of the PIAs occurred at the A133/B1033 roundabout, four slight and one serious in severity. Two occurred in a similar location, but with different causation factors (one due to a wheel coming off a motorcycle and one rear end shunt). The other PIAs were due to > a vehicle cutting across another; > a collision between a car and a cycle; and > a rear end shunt. Two of the PIAs occurred on the link between the two roundabouts at different locations, both serious in severity and with different causation factors (one a shunt and one a collision due to a rider (cycle or motorcycle not specified) pulling on front of a car. Three of the PIAs occurred on the westbound section of the circulating carriageway at the B1441 Weeley Bypass roundabout, all slight in severity and were due to loss of control; two through driver error and one due to a fault with the vehicle. Two occurred on the eastbound approach to the B1441 Weeley Bypass roundabout, one shunt and one involving a car and a cycle where the driver of the car did not give the cyclist enough space, both were slight in severity. Whilst there are no clusters of PIAs (defined as three or more) with the same causation factor, given there have been two (or three) involving cyclists, Volume 9, Report 24: Outline CTMP highlights this location for

Link ID	Highway link	Percentage impact	Sensitivity	Assessment
				specific warning signage of the VE construction traffic, noting this only equates to around 15% of the total cumulative vehicle movements on this highway link. Given the above, the magnitude of impact can be considered to be 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.
27	B1441 Clacton Road	10.6	High	There have been six PIAs in the assessment period on the B1441 Clacton Road, all at different locations, five slight and one serious in severity, with the following causation factors: > A head on collision when a vehicle turned into railway station car park; > A child cycled into the road form the footway; > A collision with a car and cycle with the cyclist not noticing a car turning into a drive; > A vehicle reversing out of a drive colliding with a passing vehicle; > A car colliding with horse rider; and > A car pulled out and collided with a cyclist Whilst two of the PIAs involving cyclists were due the cyclist error, given there have been three PIAs involving a cyclist and one involving a horse rider, Volume 9, Report 24: Outline CTMP highlights this location for specific warning signage of the VE construction traffic.

Link ID	Highway link	Percentage impact	Sensitivity	Assessment
				Given the above, and since the 10% threshold for the further assessment is only marginally breached, 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
31	B1035 Tendring Road	23.8	Medium	There have been no PIAs on the B1035 Tendring Road within the assessment period. The B1035 Tendring Road is considered a highway link with medium sensitivity and taking the accident rate into account and with the mitigation including the Volume 9, Report 24: Outline CTMP, the magnitude of impact of vulnerable road users and road safety is considered to be negligible, which would result in a **minor** adverse effect which is **not significant** in terms of the EIA Regulations.
32	B1035 Thorpe Road	11.5	Low	There have been no PIAs on the section of the B1035 Thorpe Road that triggers the assessment (to the west of AC-05) within the assessment period. The B1035 Thorpe Road is considered a highway link with low sensitivity and taking the accident rate into account, the borderline magnitude of impact at 11.5% and with the mitigation including the Volume 9, Report 24: Outline CTMP, the magnitude of impact of vulnerable road users and road safety is considered to be negligible, which would result in a **negligible** adverse effect, which is **not significant** in terms of the EIA Regulations.
44	Bentley Road	224.4	Low	There have been two PIA on Bentley Road in the assessment period, one slight and one serious in severity, at different locations. The PIAs were due to driver error and did not involve a WCH.

Link ID	Highway link	Percentage impact	Sensitivity	Assessment
				Bentley Road is considered a highway link with low sensitivity; however, for the effect on vulnerable road users and road safety, given the very low number of HGVs that use it and the width constraints for some sections, the sensitivity can be considered high. However, with the mitigation of widening on Bentley Road, to facilitate two HGVs passing safely and the potential segregated WCH path (a cumulative mitigation option for VE, NF OWF and EACN), the sensitivity can be reduced back to medium. With the very low accident rate and account and with the mitigation including Volume 9, Report 24: Outline CTMP the magnitude of impact on vulnerable road users and road safety is considered to be low, which would result in a **minor** adverse effect, which is **not significant** in terms of the EIA Regulations.
44	B1029 (north of Harwich Road)	12.4	Medium	There have been six PIAs at the B1209 Harwich Road junction (four slight and two serious in severity); all of which involved cars or motorcycles, with one of the vehicles undertaking a right turn. Visibility for vehicle turning from the B1029 (north of Harwich Road) (northern or southern approach) onto Harwich Road is good and forward visibility along Harwich Road for vehicle turning right onto the B1029 (north of Harwich Road) (northern or southern approach) and therefore the PIAs were likely due to driver error. There have been seven PIAs on the B1029 (north of Harwich Road) between Harwich Road and Waterhouse Lane (five slight and two serious in severity), all at different locations and none involving a pedestrian or cyclist.

Link ID	Highway link	Percentage impact	Sensitivity	Assessment
				The B1029 (north of Harwich Road) is considered a highway link with medium sensitivity and taking the accident rate into account, the borderline magnitude of impact or assessment at 12.4% and with the mitigation including the Volume 9, Report 24: Outline CTMP, the magnitude of impact of vulnerable road users and road safety is considered to be negligible, which would result in a **minor** adverse effect, which is **not significant** in terms of the EIA Regulations.
45	Waterhouse Lane	73.9	High	There have been no PIAs on Waterhouse Lane (including Little Bromley Road/Ardleigh Road). Waterhouse Lane is considered a highway link with high sensitivity; however, as the VE construction vehicles that could use this route would be cars/LGVs, the sensitivity can be reduced to medium. Taking the existing highway safety record into account and the mitigation including Volume 9, Report 24: Outline CTMP, the magnitude of impact on vulnerable road users and road safety is considered to be low, which would result in a **minor** adverse effect, which is **not significant** in terms of the EIA Regulations.

PEDESTRIAN AMENITY

8.12.42 In Table 8.5, less than a 100% increase in total or HGV traffic is considered a negligible magnitude of impact on the potential effect on pedestrian amenity. Table 8.52 summarises the level of effects on these links:

Table 8.52: Highway links - negligible magnitude of impact (pedestrian amenity)

Link ID	Highway link	Sensitivity	Level of effect
11	A120 between A133 and Harwich Road	Negligible	Negligible
12	A120 between Harwich Road and Bentley Road	Negligible	Negligible
13	A120 between Bentley Road and B1035	Negligible	Negligible
14	A120 (East of B1035)	Negligible	Negligible
15	A120 at Harwich	Negligible	Negligible
16	A133 (A120 to A133 Main Road)	Low	Negligible
18	A133 (B1033 to B1027)	Low	Negligible
23	B1027 Valley Road (Clacton)	High	Minor
26	B1033 Colchester Road (west of B1441)	Medium	Minor
27	B1441 Clacton Road	High	Minor
28	B1414 Harwich Road	Medium	Minor
29	B1033 Frinton Road	High	Minor
30	B1033 Colchester Road (east of B1441)	High	Minor
32	B1035 Thorpe Road	Low	Negligible
33	B1035 south of A120	Negligible	Negligible
44	B1029 (north of Harwich Road)	Medium	Minor
45	Waterhouse Lane	High	Minor

8.12.43 In summary, with the addition of the cumulative projects, there would be a **negligible** or **minor** adverse effect on pedestrian amenity on the highway links in Table 8.52, which is **not significant** in terms of the EIA Regulations.

8.12.44 For the highway links with a change in HGV traffic flow greater than 100%,Table 8.5 requires a review based upon the quantum of vehicles, vehicle speed and pedestrian footfall is required to identify the adverse magnitude of impact, which is provided Table 8.53.

Table 8.53: Assessment of cumulative effects on pedestrian amenity

Link ID	Highway link	Percentage impact	Sensitivity	Assessment
24	B1032 Frinton Road	101.4	High	As the 101.4.% increase in the number of HGVs is marginally over the threshold for assessment, the magnitude of impact can be considered to be low. However, with the mitigation including Volume 9, Report 24: Outline CTMP the magnitude of impact can be reduced to negligible. This would result in an adverse effect that is **minor** in significance which is **not significant** in terms of the EIA Regulations.
25	B1032 Clacton Road	116.5	Low	On the B1032 Clacton Road, as there are unlikely to be many pedestrian movements, the sensitivity can be reduced to negligible. The 116.5% increase in the number of HGVs is considered to be low magnitude of impact, given the unlikely pedestrian movements. This would result in an adverse effect that is **negligible** in significance which is **not significant** in terms of the EIA Regulations

Link ID	Highway link	Percentage impact	Sensitivity	Assessment
31	B1035 Tendring Road	214.0	Medium	For the B1035 Tendring Road, which has medium sensitivity, a 214.07% increase in the number of HGVs is considered to be low magnitude of impact as per the assessment of VE construction traffic alone (an increase of 190.0%), given the very low number of daily HGVs on this highway link in the baseline (40), there is a footway adjacent to the six dwellings and there have been no PIAs in this location during the assessment period (also in the total 23 years of data using Crashmap). This would result in an adverse effect that is **minor** in significance which is **not significant** in terms of the EIA Regulations.
35	Bentley Road	2,056.7	Low	Whilst the additional daily total vehicle and HGV movements in the cumulative assessment (with NF OWF and EACN) are forecast to increase by a factor of 1.7 and 2.8 respectively from Scenario 1, the construction of VE (including NF OWF ducts) and the analysis of pedestrian amenity set out in paragraph 8.10.47, particularly with the potential segregated WCH path on Bentley Road, the requirement for which would be discussed and agreed with Essex County Council. Notwithstanding, the above, it is acknowledged that, given the current vehicle movements on Bentley Road (particularly the very low number of HGVs), the changes in traffic movements will be discernible for the residents of the properties along this section of Bentley Road and consequently the DCO Application will be supported by a Construction Traffic Management Plan (CTMP) and a Workforce Travel Plan (WTP), that will

Link ID	Highway link	Percentage impact	Sensitivity	Assessment
				include measures to further reduce peak in construction vehicle movements, such as: > Coordination between projects to reduce the maximum daily construction vehicle movements, wherever practicable; and > Use of satellite car parks (either at TCCs that do not require using Bentley Road and a shuttle bus service for the construction workforce. The Principal Contractor will therefore be required to implement additional measures as part of the final CTMP and final WTP reduce the forecast numbers of peak construction traffic movements along Bentley Road. Based on the above, there would be a **minor** adverse effect, which is **not significant** in terms of the EIA Regulations

FEAR AND INTIMIDATION

8.12.45 As there are limited or no pedestrian movements on the A12, A120 and A133, these highway links have been screened out of the cumulative assessment of fear and intimidation.

8.12.46 Table 8.54Table 8.35 sets out the cumulative assessment of fear and intimidation in 2027 with the addition of VE construction vehicle movements, NSIPs and other developments.

8.12.47 The criteria in Table 8.3 and Table 8.4 have been used to derive the degree of hazard.

8.12.48 As shown in Table 8.54 there is no change in the level of fear and intimidation between the baseline assessment and the 2027 cumulative assessment and therefore, using the criteria in Table 8.7, the magnitude of impact is negligible for all assessed highway links. Therefore, the highway links with negligible or low sensitivity (links 25 and 32 to 35) would result in a **negligible** adverse effect, which is **not significant** in terms of EIA Regulations.

8.12.49 For the highway links with medium or high sensitivity (links 23, 24, 26 to 31 and 45) would result in a **minor** adverse effect, which is **not significant** in terms of EIA Regulations.

Table 8.54: Fear and Intimidation – 2027 with VE, NSIPs and other developments cumulative assessment

Link ID	Highway link	Average traffic flow over 18-hour day – all vehicles/hour 2-way flow	Total 18-hour heavy vehicle flow	Average vehicle speed	Degree of hazard				Level of fear and intimidation
					Average traffic flow over 18-hour day – all vehicles/hour 2-way flow	Total 18-hour heavy vehicle flow	Average vehicle speed	Total score	
23	B1027 Valley Road (Clacton)	863	347	26	10	0	10	20	Small
24	B1032 Frinton Road	456	262	27	0	0	10	10	Small
25	B1032 Clacton Road	443	244	40	0	0	30	30	Moderate
26	B1033 Colchester Road (west of B1441)	957	462	39	10	0	20	30	Moderate
27	B1441 Clacton Road	380	237	34	0	0	20	20	Small
28	B1414 Harwich Road	361	212	36	0	0	20	20	Small
29	B1033 Frinton Road	700	303	37	10	0	20	30	Moderate
30	B1033 Colchester Road (east of B1441)	583	324	47	0	0	30	30	Moderate
31	B1035 Tendring Road	113	129	40	0	0	30	30	Moderate
32	B1035 Thorpe Road	151	97	44	0	0	30	30	Moderate
33	B1035 south of A120	353	221	43	0	0	30	30	Moderate
34	B1035 Clacton Road	499	248	43	0	0	30	30	Moderate
35	Bentley Road	119	471	40	0	0	30	30	Moderate
45	Waterhouse Lane	34	13	40	0	0	30	30	Small

USERS OF PUBLIC RIGHTS OF WAY

8.12.50 The CEA of the potential impacts of users of PRoW is only directly relevant to the addition of vehicle movements associated with NF OWF, which would share the same temporary haul roads and intersect the same PRoW. Therefore, whilst the number of construction vehicle movements crossing a PRoW would increase as a result of NF OWF being constructed at the same time as VE, the assessment presented in Table 8.36 to Table 8.40: is applicable to the CEA.

8.12.51 Whilst not formally assessed, in the scenario when the temporary haul road between Bentley Road and Ardleigh Road is used by VE and NF OWF construction vehicles simultaneously, there would be an increase in the number of vehicles crossing FP16 172 and FP17 172 and therefore a greater likelihood of users being delayed whilst a construction vehicle passes; however, any delays would be short. In the event the construction of VE and NF OWF are staggered, there would be a greater duration in which users of these footpaths would be affected.

8.12.52 There also may be some indirect cumulative impacts to users of PRoW should the EACN Substation be constructed at the same time at VE in that this may involve the temporary closure of and diversion of PRoW whilst there may be PRoW temporarily closures and diversions associated with the construction of VE. However, as the details of this are not known, no further consideration has been provided in the CEA.

ABNORMAL INDIVISIBLE LOADS

8.12.53 For the delivery of AILs, the CEA is only relevant to NF OWF and the EACN Substation, which would also require AIL deliveries. As the AIL deliveries for each project would not occur at the same time and taking the measures described in paragraphs 8.10.12 to 8.10.14 into account, there would be **no significant** effects in terms of the EIA Regulations.

8.13 CLIMATE CHANGE

Due to the nature of Traffic and Transport, the receptor assessed within this chapter are not considered to be directly sensitive to climatic changes, and an assessment of climate change has therefore not been carried out.

INTER RELATIONSHIPS

8.13.1 The inter-related effects assessment considers likely significant effects from multiple impacts and activities from the construction, operation and decommissioning of VE 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.

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

8.13.3 Receptor let 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 noise and air quality impacts, which are considered in Volume 6 Part 3, Chapter 9: Airborne Noise and Vibration and Volume 6 Part 3, Chapter 10: Air Quality, respectively. It is not anticipated that these inter-relationships will lead to any significant effects greater than the assessments presented for each discipline.

8.14 TRANSBOUNDARY EFFECTS

8.14.1 There will be no national transboundary effects arising from VE with regard to Traffic and Transport.

8.15 SUMMARY OF EFFECTS

8.15.1 This assessment has considered the potential Traffic and Transport effects arising from onshore activities associated with VE. 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.

8.15.2 The approach undertaken was based upon the PINS Scoping Opinion (PINS, 2021), which was subsequently presented to and agreed with the Traffic and Transport ETG. The assessment has considered feedback received in response through the Evidence Plan process that was undertaken between November 2021 and January 2024.

8.15.3 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 GEART/GEATM, DMRB and the use of professional judgement.

8.15.4 Peak hour vehicle movements associated with the constriction of VE have been considered for the impacts of driver severance and delay for all highway links within the study area. The outcome of the assessment does not include any significant effects.

8.15.5 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.

8.15.6 Based on a screening assessment using Rules 1 and 2 in GEART, all highway links with the exception of the A12, A120, B1029 west of Clacton, B1035 Clacton Road and B1029 (north of Harwich Road) required full assessment under EIA regulations, for the impacts of an increase in VE construction vehicle movements. The outcome of the assessment identifies no significant effects.

8.15.7 The consideration of WCH users of all PRoW within the study area that were identified as being directly impacted by the Onshore ECC have been assessed, using the guidance in DMRB LA 112. The outcome does not include any significant effects.

8.15.8 An assessment of the decommissioning phase was not required as the likely effects would be no greater than the construction phase.

8.15.9 A cumulative assessment has been undertaken based on some estimated traffic flows associated with a number of consented developments and consented and proposed NSIPs, including NF OWF and the EACN Substation and whilst no significant cumulative effects are predicted, there is the potential to coordinate traffic movements to endeavour to minimise cumulative impacts wherever possible.

8.15.10 A summary of the assessment outcomes is provided in Table 8.55.

Table 8.55: Summary of effects

Description of Impact	Effects	Additional mitigation measures	Residual impact
Construction			
Driver delay and severance - increase in vehicle movements	**Negligible**	Measures within Volume 9, Report 24: Outline CTMP and Volume 9, Report 26: Outline WTP	**Negligible adverse (not significant)**
Driver delay and severance - use of open trenching	**Negligible to minor**	Measures within Volume 9, Report 24: Outline CTMP	**Negligible adverse (not significant)**
Community severance	**Negligible to minor**	Measures within Volume 9, Report 24: Outline CTMP	**Negligible adverse (not significant)**
Vulnerable road users and road safety	**Negligible**	Measures within Volume 9, Report 24: Outline CTMP	**Negligible adverse (not significant)**
Pedestrian amenity	**Negligible to minor**	Measures within Volume 9, Report 24: Outline CTMP	**Negligible adverse (not significant)**
Fear and intimidation	**Negligible to minor**	None	**Negligible adverse (not significant) to minor adverse (not significant)**
Dust and dirt	**Negligible to minor**	Measures within Volume 9, Report 24: Outline CTMP	**Negligible adverse (not significant) to minor adverse (not significant)**
Users of PRoW	**Negligible to minor**	Measures within Volume 9, Report 25: Outline PAMP	**Negligible adverse (not significant)**

Description of Impact	Effects	Additional mitigation measures	Residual impact
Abnormal Indivisible Loads	**Negligible**	Measures within CTMP and ALAR	**Negligible adverse (not significant)**

8.16 REFERENCES

Department for Energy Security & Net Zero (2023) National Policy Statement for Energy (EN-1).

Department for Energy Security & Net Zero (2023) National Policy Statement for Renewable Energy Infrastructure (EN-3).

Department for Energy Security & Net Zero (2023) National Policy Statement for Electricity Infrastructure (EN-5).

Essex County Council (2021) Essex Local Transport Plan

Essex County Council (2021) Essex Walking Strategy

Institute of Environmental Management and Assessment (IEMA) (2004). Guidelines for Environmental Impact Assessment

Ministry of Housing, Communities & Local Government (2021). National Planning Policy Framework

Ministry of Levelling Up, Housing and Communities (MLHC), Planning Practice Guidance - Overarching Principles on Travel Plans, Transport Assessments and Statements, 2014);

National Highways (2020). Design Manual for Roads and Bridges LA 112

National Highways (2022) Circular 02/13 Update ‘‘The Strategic Road Network and the Delivery of Sustainable Development’

North Essex Authorities (2021 Tendring District Local Plan 2013-2033 and Beyond

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