



F I V E 
ESTUARIES
OFFSHORE WIND FARM

FIVE ESTUARIES
OFFSHORE WIND FARM
PRELIMINARY ENVIRONMENTAL
INFORMATION REPORT

**VOLUME 3, CHAPTER 8: TRAFFIC AND
TRANSPORT**

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DEFINITION OF ACRONYMS

Acronym	Definition
AADT	Annual Average Daily Traffic
AIL	Abnormal Indivisible Load
ALAR	Abnormal Load Assessment Report
ATC	Automatic Traffic Count
CoCP	Code of Construction Practice
CTMP	Construction Traffic Management Plan
DLHC	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
NEA	North Essex Authorities



Acronym	Definition
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
SSA East	Substation Search Area East
SSA West	Substation Search Area West
TEMPRO	Trip End Model Presentation Program
TJB	Transition Joint Bay
WCH	Walkers, Cyclists and Horse-riders
WTP	Workforce Travel Plan



GLOSSARY OF TERMS

Term	Definition
Cable Works 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 Energy Security and Net Zero (ESNZ).
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.
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.
Maximum Design Scenario (MDS)	The maximum design parameters of the combined project assets that result in the



Term	Definition
	greatest potential for change in relation to each impact assessed.
Mitigation	Mitigation measures are commitments made by the project to reduce and/or eliminate the potential for significant effects to arise as a result of the project. Mitigation measures can be embedded (part of the project design) or secondarily added to reduce impacts in the case of potentially significant effects.
National Highways	A governmental agency charged with operating, maintaining and improving motorways and major trunk roads in England.
Onshore Export Cable Corridor (onshore ECC)	At PEIR, the Onshore ECC is the wider cable corridor within which the typically 60 m cable route is located. The Onshore ECC is typically approximately 200m to 250 m wide, however some areas require a wider corridor (such as where trenchless crossing may take place).
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.
OnSS Access Zone	The area which will contain the final OnSS access route (both construction and operational)
OnSS Search Areas	The areas of search for the location of the OnSS.
PEIR	Preliminary Environmental Information Report. The PEIR is written in the style of a draft Environmental Statement (ES) and forms the basis of statutory consultation. Following that consultation, the PEIR documentation will be updated into the final ES that will accompany the application for the Development Consent Order (DCO).



Term	Definition
Red Line Boundary (RLB)	The extent of development including all works, access routes, Temporary Construction Compounds (TCCs), visibility splays and discharge points. For the Environmental Statement (ES) the refined RLB will become 'the proposed Order Limits'.
Route section	A defined section of the onshore ECC route
Shuttle working	One-way traffic operation on a highway link to allow construction works in part of the carriageway.
STOP/ GO Boards	Manually operated temporary traffic control system
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	Five Estuaries Offshore Wind Farm
Wheelbase	The distance between the front and rear axles of a vehicle.
400 kV 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 Preliminary Environmental Information Report (PEIR) 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 5, Annex 8.1 Baseline Technical Report;
 - > Volume 5, Annex 8.2 Trip Generation and Distribution Calculations;
 - > Volume 5, Annex 8.3 Outline Construction Traffic Management Plan (CTMP);
 - > Volume 5, Annex 8.4 Outline Public Access Management Plan (PAMP); and
 - > Volume 5, Annex 8.5 Outline Workforce Travel Plan (WTP).
- 8.1.4 The chapter has also been informed by the following PEIR chapter:
- > Volume 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. Approval from the street authority is required under the New Roads and Street Works Act 1991, to lay services, including electricity cables, in the public highway. Highway work must be carried out in accordance with the notified programme.



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. Approval is required from the Highways Authority under Section 278 for the installation of 'passing places' or other works to improve access. Work must be undertaken to published standards using a contractor approved by the Highways Authority. Approval is required for closures of roads and other Public Rights of Way.

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, 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 Those relevant to VE are:

- > Overarching NPS for Energy (EN-1) (DECC 2011a);
- > NPS for Renewable Energy Infrastructure (EN-3) (DECC 2011b); and
- > NPS for Electricity Networks Infrastructure (EN-5) (DECC 2011c).

8.2.6 In addition to the current NPS, draft NPSs were consulted on between September and November 2021. The draft NPSs have been reviewed to determine the emerging expectations and changes from previous iterations of the NPSs. This includes the Draft Overarching NPS EN-1 (DECC, 2021a), EN-3 (DECC, 2021b) and EN-5 (DECC, 2021c).

NATIONAL PLANNING POLICY FRAMEWORK

8.2.7 The National Planning Policy Framework (NPPF) (Ministry of Housing, Communities and Local Government, updated 2021) 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 109 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 111 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 02/13 UPDATE ‘THE STRATEGIC ROAD NETWORK AND THE DELIVERY OF SUSTAINABLE DEVELOPMENT’ (2022)

8.2.11 Circular 02.13 sets out how 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 A12/ A120 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/ 2004 to 2027/ 2008) and the safety improvements on the A120 at Harwich Road, Bentley Road and Little Bentley 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
Overarching NPS for Energy EN- 1	Paragraph 5.13.3 (EN-1) states: <i>“If a project is likely to have significant transport implications, the applicant’s ES should include a transport assessment, using the NATA/ WebTAG methodology stipulated in Department for Transport (DfT) guidance, or any successor to such methodology.”</i>	This Traffic and Transport chapter and supporting annexes have been produced in accordance with current transport guidance and this is evidenced throughout.
Draft Overarching NPS EN-1	Paragraph 5.14.3 states: <i>“If a project is likely to have significant transport implications, the applicant’s ES should include a transport assessment, using the NATA/ WebTAG methodology stipulated in Department for Transport (DfT) guidance, or any successor to such methodology.”</i>	This Traffic and Transport chapter and supporting annexes have been produced in accordance with current transport guidance and this is evidenced throughout.
Overarching NPS for Energy EN- 1	Paragraph 5.13.4 states: <i>“Where appropriate, 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</i>	Section 8.8 outlines the embedded Traffic and Transport mitigation measures for the construction phase of VE, such as the Code of Construction Practice (CoCP) (Volume 7, Report



POLICY	KEY PROVISIONS	SECTION WHERE COMMENT ADDRESSED
	<p><i>access by public transport, walking and cycling, to reduce the need for parking associated with the proposal and to mitigate transport impacts.”</i></p>	<p>: Draft Code of Construction Practice) WTP (Volume 5, Annex 8.5), which will include demand management measures to be adopted.</p>
<p>Draft Overarching NPS EN-1</p>	<p>Paragraph 5.14.4 states:</p> <p><i>“Where appropriate, 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 public transport, walking and cycling, to reduce the need for parking associated with the proposal and to mitigate transport impacts.”</i></p> <p><i>“The assessment should also consider any possible disruption to services and infrastructure (such as road, rail and airports).”</i></p>	<p>Section 8.8 outlines the embedded Traffic and Transport mitigation measures for the construction phase of VE, such as the Outline WTP (Volume 5, Annex 8.5) The Outline WTP includes demand management measures to be adopted.</p> <p>Section 8.9 sets out the assessment of the likely effects on the roads within the study area as a result of the construction phase of VE.</p> <p>Table 8.2 sets out how the assessment of disruption to the railway has been scoped out.</p>
<p>Overarching NPS for Energy EN-1</p>	<p>Paragraph 5.13.6 states:</p> <p><i>“A new energy NSIP may give rise to substantial impacts on the surrounding transport infrastructure and the IPC should therefore ensure that the applicant has sought to mitigate these impacts, including during the construction phase of the development. Where the proposed mitigation measures are insufficient to reduce the impact on the transport infrastructure to acceptable levels,</i></p>	<p>Section 8.9 sets out the assessment of the likely Traffic and Transport effects as a result of the construction phase of VE. With the mitigation identified in this chapter (Outline CTMP (Volume 5, Annex 8.3), Outline PAMP (Volume 5, Annex 8.4) and Outline WTP (Volume 5, Annex 8.5)), the impact on the transport infrastructure</p>



POLICY	KEY PROVISIONS	SECTION WHERE COMMENT ADDRESSED
	<p><i>the IPC should consider requirements to mitigate adverse impacts on transport networks arising from the development, as set out below</i></p>	<p>is considered to be at acceptable levels with no additional mitigation required.</p>
<p>Draft Overarching NPS EN-1</p>	<p>Paragraph 5.14.6 states: <i>“A new energy NSIP may give rise to substantial impacts on the surrounding transport infrastructure and the IPC should therefore ensure that the applicant has sought to mitigate these impacts, including during the construction phase of the development. Where the proposed mitigation measures are insufficient to reduce the impact on the transport infrastructure to acceptable levels, the IPC should consider requirements to mitigate adverse impacts on transport networks arising from the development, as set out below”</i></p>	<p>Section 8.9 sets out the assessment of the likely Traffic and Transport effects as a result of the construction phase of VE. With the mitigation identified in this chapter (Outline CTMP (Volume 5, Annex 8.3), Outline PAMP (Volume 5, Annex 8.4) and Outline WTP (Volume 5, Annex 8.5)), the impact on the transport infrastructure is considered to be at acceptable levels with no additional mitigation required.</p>
<p>Draft Overarching NPS EN-1</p>	<p>Paragraph 5.14.8 states: <i>“The Secretary of State should only consider preventing or 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.”</i></p>	<p>The assessment of road safety in relation to the additional traffic associated with the construction phase of VE is set out in Paragraphs 8.9.27 to 8.9.33. It is concluded that there are no significant road safety effects, with any impacts further reduced by the types of traffic management measures that would be implemented as set out in the Outline CTMP (Volume 5, Annex 8.3) and therefore considered to be an acceptable impact.</p> <p>The cumulative impact assessment has not been undertaken for PEIR due to</p>



POLICY	KEY PROVISIONS	SECTION WHERE COMMENT ADDRESSED
		ongoing discussions with North Falls project team and the availability of information on other NSIPs (as set out in Paragraph 8.11.1)
NPS for Renewable Energy Infrastructure EN-3	<p>Paragraph 2.6.4 states:</p> <p><i>“The extent to which generic impacts set out in EN-1 are relevant may depend upon the phase of the proposed development being considered. For example, land-based Traffic and Transport and noise issues may be relevant during the construction and decommissioning periods only, depending upon the specific proposal.”</i></p>	This chapter does not include an assessment of the traffic impacts associated with operation and maintenance or the decommission phase of VE as set out in Paragraphs 8.4.26 and 8.4.27.
Draft Overarching NPS EN-3	<p>Paragraph 2.20.4 states:</p> <p><i>“The extent to which generic impacts set out in EN-1 are relevant may depend upon the phase of the proposed development being considered. For example, land-based Traffic and Transport and noise issues may be relevant during the construction and decommissioning periods only, depending upon the specific proposal.”</i></p>	This chapter does not include an assessment of the traffic impacts associated with operation and maintenance or the decommission phase of VE as set out in Paragraph 8.4.26 and 8.4.27.
TDLP	<p>Policy CP1 states:</p> <p><i>“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.”</i></p>	Section 8.8 outlines the embedded Traffic and Transport mitigation measures for the construction phase of VE, such as the Outline WTP (Volume 5, Annex 8.5 The Outline WTP will include demand management measures to be adopted.
TDLP	<p>Policy CP1 states:</p> <p><i>“Planning applications for new major development likely to have significant transport implications will normally</i></p>	The Transport Assessment element is included in the Baseline Technical Report(Annex 5.8.1) and



POLICY	KEY PROVISIONS	SECTION WHERE COMMENT ADDRESSED
	<p><i>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”</i></p>	<p>Trip Generation and Distribution (Volume 5, Annex 8.2), which has been discussed with Essex County Council and National Highways(NH) during the Evidence Plan process.</p>
TDLP	<p>Policy CP2 states: <i>“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.”</i></p>	<p>Section 8.8 outlines the embedded Traffic and Transport mitigation measures for the construction phase of VE, such as the Outline WTP (Volume 5, Annex 8.5) The Outline WTP will include demand management measures to be adopted.</p>
TDLP	<p>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.</p>	<p>The assessment of road safety in relation to the additional traffic associated with the construction phase of VE is set out in Paragraphs 8.9.27 to 8.9.33. It is concluded that there are no significant road safety effects, with any impacts further reduced by the types of traffic management measures that would be implemented as set out in the Outline CTMP Volume 5, Annex 8.3) and therefore, considered to be an acceptable impact.</p> <p>The full cumulative impact assessment has not been undertaken for PEIR due to availability of data on other NSIPs (as set out in Paragraph 8.11.1),</p>



POLICY	KEY PROVISIONS	SECTION WHERE COMMENT ADDRESSED
		although likely impacts have been considered in Paragraphs 8.13.9 and 8.13.10

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, comprising discussions with Essex County Council, NH and NHS Suffolk and North East Essex Integrated Care Board.
- 8.3.2 A Scoping Opinion for VE was received from the Planning Inspectorate (PINS) in (November 2021). This included responses to the proposed assessment methodology for further consideration.
- 8.3.3 A non-statutory consultation was undertaken in August 2022, comments were received from both National Highways and Essex County Council highways.
- 8.3.4 Table 8.2 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	The Scoping Report states that operation of rail services on the Sunshine Coast Line, 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	Discussions with National Rail are underway, with a view to agreeing a Basic Asset Protection Agreement.



Date and consultation phase/ type	Consultation and key issues raised	Section where comment addressed
	agreement with the relevant consultation bodies and the absence of LSE on the environment.	
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 8.4.26 and 8.4.27.
PINS Scoping Opinion November 2021	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	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 consideration of traffic flows at the A12 Junction 29 has been included following feedback from NH at the ETG (November 2022)



Date and consultation phase/ type	Consultation and key issues raised	Section where comment addressed
	and SCC in Appendix 2 of this report.	
PINS Scoping Opinion November 2021	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).	DfT traffic data has been used instead of traffic data from NH's Webtris database as the data was considered to be more suitable (data availability and location).
PINS Scoping Opinion November 2021	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.	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. 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 5, Annex 8.1 and 8.2
PINS Scoping Opinion November 2021	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 5, Annex 8.1 and Paragraph 8.13.2 of this chapter.
PINS Scoping Opinion November 2021	The Scoping Report states that the assessment will be undertaken with reference to the Guidance for Environmental Assessment of Road Traffic (GEART). No	Driver amenity is not scoped into the assessment as it not specifically referred to in GEART. The pleasantness of a journey



Date and consultation phase/ type	Consultation and key issues raised	Section where comment addressed
	<p>reference is made within the Scoping Report about potential effects to driver amenity; to pedestrians 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.</p>	<p>for a driver of a vehicle is not considered a necessary potential effect to consider in the Traffic and Transport chapter for VE</p> <p>Thresholds for HGV increases that will heighten peoples fear and intimidation are 'Extreme' when a link road has a composition of 3000+ average 18-hour flow, 'Great' for a 2,000 - 3,000 18-hour flow and Moderate for a '1,000 - 2,000' 18-hour flow.</p> <p>Fear and intimidation to pedestrians is not scoped into the assessment as the only highway links that are above the minimum threshold and would change threshold as a result of VE is the A120 (west of the junction with Harwich Road) which is not used by pedestrians.</p> <p>The assessment of vibration from HGVs is scoped out of the assessment in Chapter 9: Noise and Vibration.</p>
<p>PINS Scoping Opinion November 2021</p>	<p>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</p>	<p>This is explained in Volume 5, Annex 8.2 and Section 8.7 of this chapter</p>



Date and consultation phase/ type	Consultation and key issues raised	Section where comment addressed
	the worst-case scenario for the purposes of identifying significant effects	
PINS Scoping Opinion November 2021	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 5, Annex 8.1 and Paragraphs 8.6.21 and 8.6.27 of this chapter.
PINS Scoping Opinion November 2021	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 routing investigations are currently being undertaken and a brief summary is provided in The full consideration of AILs will be undertaken for the ES submitted with the DCO application.
PINS Scoping Opinion November 2021	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.



Date and consultation phase/ type	Consultation and key issues raised	Section where comment addressed
<p>PINS Scoping Opinion November 2021</p>	<p>The ES should confirm whether any permanent diversions or closures of Public Right of Way (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.</p>	<p>It is not yet known whether there would be any permanent diversions or closures of PRoW. The PAMP (Volume 5, Annex 8.4) sets out the potential temporary diversions) closures that might be required during construction of VE and an assessment of this is set out in Table 8.28 to Table 8.32 of this chapter.</p>
<p>PINS Scoping Opinion November 2021 Appendix 2 (NH)</p>	<p>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.</p>	<p>The Personal Injury Accident (PIA) analysis is set out in Paragraphs 8.6.26 to 8.6.30 of this chapter for a five year period excluding the years affected by the Covid-19 pandemic.</p>
<p>PINS Scoping Opinion November 2021 Appendix 2 (NH)</p>	<p>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.</p>	<p>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 5, Annex 8.1.</p>
<p>PINS Scoping Opinion November 2021 Appendix 2 (NH)</p>	<p>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.</p>	<p>Traffic surveys have been undertaken at the A120/ Harwich Road, A120/ Bentley Road and A120/ B1035 junctions, as set out</p>



Date and consultation phase/ type	Consultation and key issues raised	Section where comment addressed
		in Section 2.1.2 of Volume 5, Annex 8.1.
<p>PINS Scoping Opinion November 2021 Appendix 2 (NH)</p>	<p>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.</p>	<p>It has been assumed that all normal construction HGVs would use the A12 and the A120 between the A12 and the A120/ B1035 junction, as set out in Section 2.5 of Volume 5, Annex 8.1 and Paragraph 8.4.35 of this chapter.</p> <p>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).</p>
<p>PINS Scoping Opinion November 2021 Appendix 2 (NH)</p>	<p>The routeing on the SRN of construction traffic to the onshore substation location should be established, including the number of trips at each junction.</p>	<p>The forecast VE vehicle movements that would use the A12 and A120 to and from the OnSS search areas (SSA East and SSA West), where the OnSS would be located is set out in Annex 5.8.2 and also see Table 8.19 of this chapter.</p>
<p>PINS Scoping Opinion November 2021 Appendix 2 (NH)</p>	<p>The routeing on the SRN of construction traffic to the onshore export cables should be established, including the number of trips at each junction.</p>	<p>The forecast VE vehicle movements that would use the A12 and A120 to and from the ECC is set out in Volume 5, Annex 8.2 and also see Table 8.19 of this chapter.</p>
<p>PINS Scoping Opinion November 2021 Appendix 2 (NH)</p>	<p>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</p>	<p>It is considered that any vehicular activity associated with the offshore activity of VE at the port (which is yet to be identified) would be captured as part of the existing use consents at the port and therefore, an assessment of these</p>



Date and consultation phase/ type	Consultation and key issues raised	Section where comment addressed
	area for each of the potential port options should be identified to inform National Highways of potential impacts.	vehicle movements do 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 assessments of junctions on the SRN, as set out in Volume 5, Annex 8.2.
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.	The calculation of the trip generation and distribution for VE construction traffic forecasts is set out in Annex 5.8.2.
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 Section 3.2.6 of Volume 5, Annex 8.2 and Paragraphs 8.9.5 and 8.9.6 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 set out in this Chapter.
PINS Scoping Opinion November 2021	A five-year period is required for collision data	The Personal Injury Accident (PIA) analysis is set out in Paragraphs 8.6.26 to 8.6.30 of this chapter for a five year period excluding the years

Date and consultation phase/ type	Consultation and key issues raised	Section where comment addressed
Appendix 2 (Essex County Council)		affected by the Covid-19 pandemic.
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 16 of Volume 5, Annex 8.1.
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 5, Annex 8.1.
Briefing Note 02 Rev A March 2022 NH Response Traffic and Transport: Data Collection Requirements Technical Note	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 8.6.30.



Date and consultation phase/ type	Consultation and key issues raised	Section where comment addressed
East of England Ambulance Service (EEAS) August 2022	<p>Key areas to address through project assessment, mitigation and management measures are summarised below;</p> <ul style="list-style-type: none"> •Traffic & transport including AIL & HGV movements-minimise potential highway network delay & route/ road diversions & closures; 	<p>This Chapter provides an assessment of VE construction HGVs, including the potential effects of delay, as set out in Paragraphs 8.9.2 to 8.9.14 of this chapter.</p>

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; 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 GEART 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.
- 8.4.5 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).
- 8.4.6 It was agreed during ETG meetings that 30 two-way vehicle movements on an approach arm to a junction is typically the threshold for the consideration for the requirement to undertake a junction capacity assessment, primarily if a junction has known existing capacity issues.
- 8.4.7 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 Export Cable Corridor (ECC) (as set out in Paragraph 8.4.34), the assessment is based on the relative importance of each link and the availability of an alternative route, using professional judgement.

COMMUNITY SEVERANCE

- 8.4.8 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.
- 8.4.9 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.
- 8.4.10 GEART suggests that changes in total traffic flow of 30%, 60% and 90% are considered to be slight, moderate and substantial respectively. However, GEART states that these figures should be used cautiously, and the assessment should pay full regard to specific local conditions, as set out on Paragraphs 8.9.22 to 8.9.26.



8.4.11 In addition to the GEART 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), Annual Average Daily Traffic (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.

VULNERABLE ROAD USERS AND ROAD SAFETY

8.4.12 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.”

8.4.13 In this context, an examination of the existing collisions/ PIAs occurring 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 2019 data to avoid the Covid-19 pandemic). 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.

PEDESTRIAN AMENITY

8.4.14 GEART 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.

DUST AND DIRT

8.4.15 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.

8.4.16 Problems with dust and dirt are unlikely to occur at distances greater than 50 m 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.

8.4.17 The impact of dust associated with the construction of VE on air quality is provided in Volume 3, Chapter 11: Air Quality.



DELIVERY OF ABNORMAL INDIVISIBLE LOADS

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)

8.4.18 Initial AIL investigations have been undertaken between the A120 and the proposed OnSS Search Areas to inform the project design and will be fully reported in the Traffic and Transport chapter of the ES for the DCO submission.

8.4.19 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 north (either from the southbound carriageway or reversing in from the northbound carriageway).

8.4.20 For either option, some modifications may be required to the existing kerbs.

8.4.21 For the option to cross the central reservation (if the vehicle arrived from the A120 north), the following improvements may be required:

- > Removable, lockable barriers and/or bollards to facilitate occasional AIL movements whilst maintaining the current road layout.

CHANGING THE CENTRAL RESERVATIONS FROM GRASS TO TARMAC OR A TRAFFICABLE FREE DRAINING SURFACE USERS OF PUBLIC RIGHTS OF WAY (PROW)

8.4.22 The criteria in DMRB LA 112 Population and Human Health have been adopted to assess the impact of the construction works associated with VE on these users.

8.4.23 Where a PRow intersects with highway links, the potential effects are considered on a traffic flow percentage increase basis. However, where PRow are proposed to be diverted or closed in part, these are considered on the basis of the disruption incurred to the existing route.

8.4.24 DMRB LA 112 states:

“The study area shall be based on the construction footprint/project boundary (including compounds and temporary land take) plus a 500 m area surrounding the project boundary.”

8.4.25 However, it goes on to say:

“Where effects are unlikely to occur within the 500 m area surrounding the project boundary, the study area should be reduced accordingly.”



8.4.26 Given the potential impacts associated with PRoW varies along the onshore ECC, the scope of assessment has been defined as all PRoW that are directly impacted by the construction works and those that form part of a specific route with the PRoW that are directly impacted.

OTHER IMPACTS

8.4.27 Traffic-borne noise and vibration effects and air quality effects informed by the traffic data outlined in this chapter are assessed in Volume 3, Chapter 10: Noise and Vibration and Volume 3, Chapter 11: Human health and Climate Change, respectively.

8.4.28 The traffic data provided to inform Volume 3, Chapter 10: Noise and Vibration and Volume 3, 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

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

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

- > Landfall/ 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 (approx. eight traffic movements per week). During two week annual maintenance period this would increase to approximately four to eight traffic movements per day.

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

DECOMMISSIONING ACTIVITIES

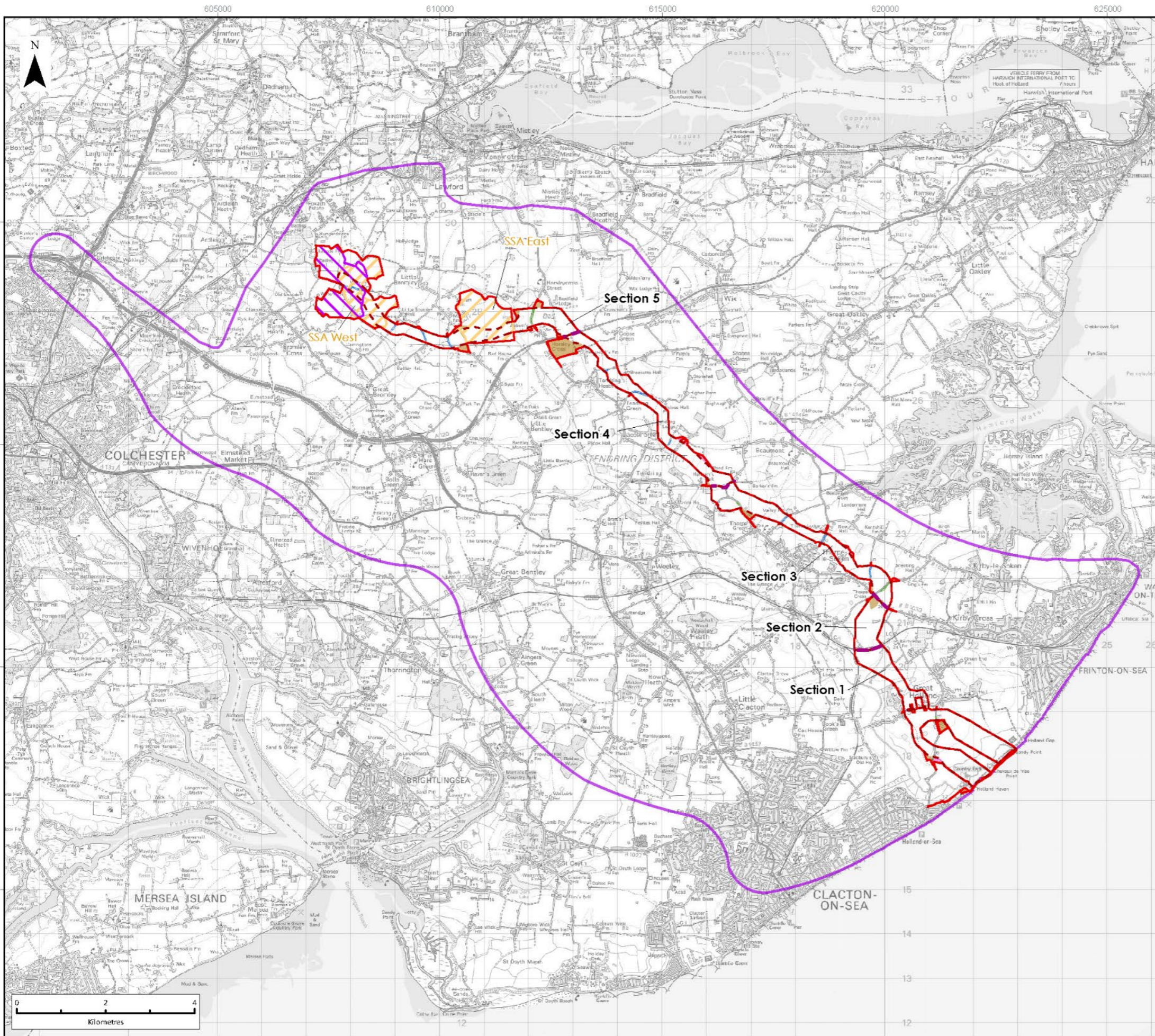
8.4.31 No decision has yet been made regarding the final decommissioning policies for the Project as it is recognised that industry best practice, rules and legislation change over time. The detail and scope of decommissioning works will be determined by the relevant legislation and guidance at the time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

8.4.32 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 (where used) 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

- 8.4.33 The onshore Traffic and Transport highway study area (as shown in Figure 8.1 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 or indirectly). 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.
- 8.4.34 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 ECC Route Section (as described in Volume 3, Chapter 1: Onshore Project Description), which are as follows:
- > **Route Section 1 :** This Route Section encompasses the landfall options at Holland Haven including beach access onto Manor Way
 - > **Route Section 2 :** This Route Section continues north from the eastern mail rail line to the west of Kirby Cross across agricultural fields towards the B1033 (Thorpe Road).
 - > **Route Section 3 :** This Route Section 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 :** This Route Section continues northwards through agricultural fields to the east of Tendring village, passing to the east of Tendring Heath towards the A120 (Harwich Road).
 - > **Route Section 5 :** Route Section 5 encompasses the area to the north of the A120 and includes the area of the proposed OnSS options (SSA East and SSA West).
- 8.4.35 The onshore highway study area is illustrated in Figure 8.1 and comprises the following highway links, which form the construction access routes (see Figure 8.2)
- > A12 (Junction 29);
 - > A120 (between the A12 and the Port of Harwich);
 - > 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); and
 - > B1414 (Harwich Road/ Station Road).



LEGEND

- Onshore Red Line Boundary
- Onshore Export Cable Corridor
- Onshore Cable Route Section Division
- National Grid Area of Search
- Onshore Substation Areas of Search
- Temporary Construction Compounds
- Works Access Required
- Haul Road Crossings
- Haul Road Access
- Traffic & Transport Study Area

Data Source:
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PROJECT TITLE:
 FIVE ESTUARIES OFFSHORE WINDFARM

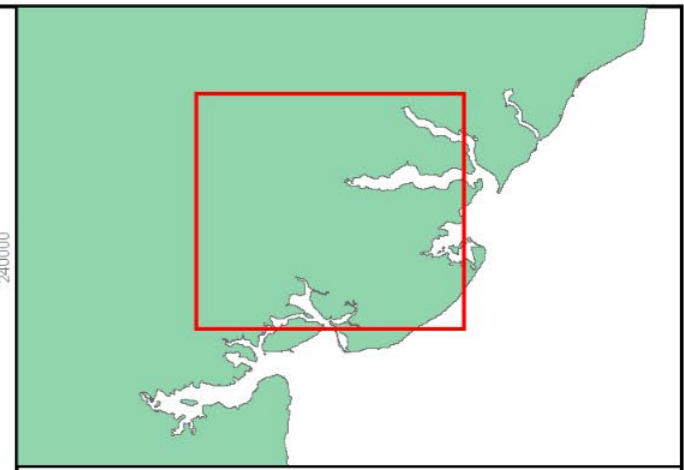
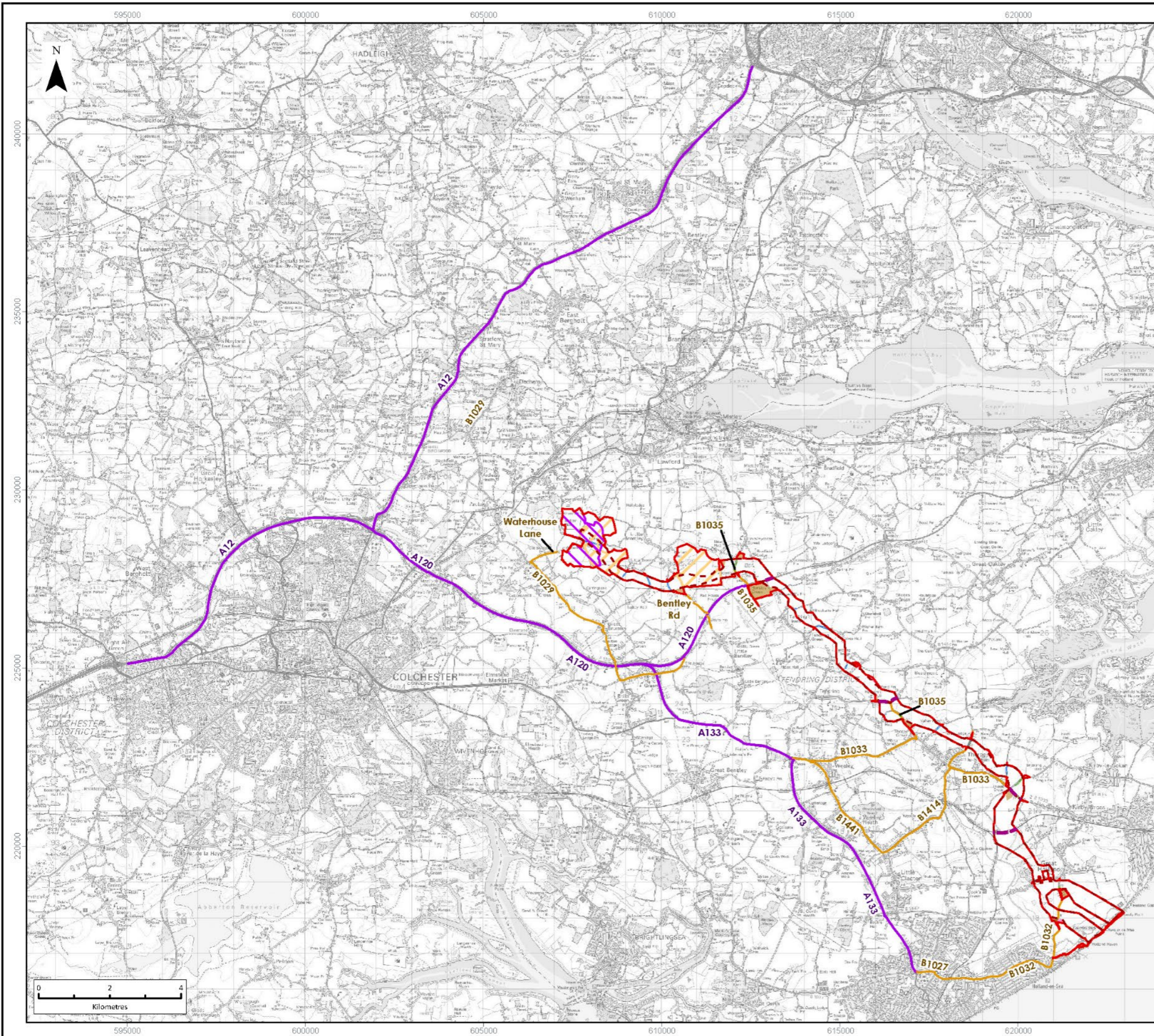
DRAWING TITLE:
 Traffic & Transport Study Area

VER	DATE	REMARKS	Drawn	Checked
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DRAWING NUMBER:
 FIGURE 8.1

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





LEGEND

- Onshore Red Line Boundary
- Onshore Export Cable Corridor
- Onshore Cable Route Section Division
- National Grid Area of Search
- Onshore Substation Areas of Search
- Temporary Construction Compounds
- Works Access Required
- Haul Road Crossings
- Haul Road Access
- Core Access Route
- Local Access Route to Temporary Construction Compound

Data Source:
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PROJECT TITLE:
 FIVE ESTUARIES OFFSHORE WINDFARM

DRAWING TITLE:
 Construction Access Routes

VER	DATE	REMARKS	Drawn	Checked
1	20/02/2023	PEIR Submission	DB	JS

DRAWING NUMBER:
 FIGURE 8.2

SCALE: 1:110,000 PLOT SIZE: A3 DATUM: OSGB 1936 COORDINATE SYSTEM: British National Grid





- > B1029 (Frating Road/ Brook Street/ Hall Road);
 - > B1034 Sneating Hall Lane;
 - > Bentley Road; and
 - > Waterhouse Lane.
- 8.4.36 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.
- 8.4.37 Additionally, the study area includes the roads that would have a haul road crossing and could be impacted should open trenching technology be utilised to install the ECC (i.e., where temporary lane or road closures may be required).
- > Little Clacton Road;
 - > B1414 Landemere Road;
 - > B1034 Sneating Hall Lane;
 - > Damant's Farm Lane;
 - > Golden Lane;
 - > Swan Road;
 - > Lodge Lane;
 - > Wolves Hall Lane;
 - > Stones Green Road;
 - > Payne's Lane;
 - > Spratts Lane;
 - > Barlon Road;
 - > Ardleigh Road; and
 - > Grange Road.
- 8.4.38 The study area also includes all PRoW that are directly and indirectly 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.

DATA SOURCES

- 8.4.39 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 5, Annex 8.1: Traffic and Transport Baseline Technical Report, 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);



- > Annual Average Daily Traffic (AADT) flows for the Local Road Network (LRN) and Strategic Road Network (SRN) (DfT National Road Statistics);
 - > STATS19 accident data for the LRN (Essex County Council);
 - > PRow maps (Essex County Council); and
 - > Accident data for the SRN (Crashmap).
- > 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

- 8.4.40 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 3, Chapter 1. Impacts during the operational and decommissioning phases have been scoped out.
- 8.4.41 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 Export Cable Corridor (ECC) and OnSS (as shown in Figure 1.2 of Volume 3, Chapter 1). It should be noted, the anticipated construction programme for the OnSS is around 36 months, but the maximum number of vehicle movements for the OnSS are taken into account on the assessment over 18 months.
- 8.4.42 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.
- 8.4.43 In summary, this chapter provides a reasonable worst-case assessment of the likely significant Traffic and Transport effects of the construction phase of VE, based on the Maximum Design Scenario (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.
- 8.4.44 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 Paragraphs 8.4.4 to 8.4.23 and Table 8.3 and Table 8.4.



ASSESSMENT CRITERIA AND ASSIGNMENT OF SIGNIFICANCE

- 8.4.45 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 GEART, DMRB LA 112 and professional judgement.
- 8.4.46 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.
- 8.4.47 The magnitude of impact has been considered according to the criteria defined in Table 8.3.



Table 8.3: Impact magnitude definitions

Magnitude of impact	Driver severance and delay	Community severance	Vulnerable road users and road safety	Pedestrian amenity	Dust and Dirt	AIL	Users of PRow	
High	Quantitative assessment of road capacity 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	>60% increase in traffic		Increase in total traffic flows or HGV flows of 90 % and above on a link intersecting a PRow. OR >500 m increase (adverse) / decrease (beneficial) in WCH journey length.	
Medium		31% to 60% increase in traffic					31% to 60% increase in traffic	Increase in total traffic flows or HGV flows of 60 to 89% (40 to 89% HGVs) on a link intersecting a PRow. OR >250 m – 500 m increase (adverse) or decrease (beneficial) in WCH journey length.
Low		<30% increase in traffic					<30% increase in traffic	Increase in total traffic flows of 30 to 59% (or increase in HGV flows of 10% to 39% on a link intersecting a PRow). OR 50 m to 250 m increase (adverse) or decrease



Magnitude of impact	Driver severance and delay	Community severance	Vulnerable road users and road safety	Pedestrian amenity	Dust and Dirt	AIL	Users of PRow
							(beneficial) in WCH journey length.
Negligible	<p><30 two-way vehicle movements at a junction approach</p> <p>No temporary lane or road closure</p>	<10% increase in traffic	<10% increase in traffic	Change in traffic flows (or HGV component) less than 100%.	<10% increase in traffic	0% increase in traffic	<p>Increase in total traffic flows or HGV flows of 29 % or under (or increase in HGV flows under 10 %) on a link intersecting a PRow. OR</p> <p><50 m increase (adverse) or decrease (beneficial) in WCH journey length.</p>



- 8.4.48 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.
- 8.4.49 For impacts associated with the increase in vehicle movements on the highway network, GEART provide two thresholds, whereby a full assessment of the impact is required:
- > 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.
- 8.4.50 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.
- 8.4.51 In this context, GEART 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 8.4.
- 8.4.52 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.
- 8.4.53 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 8.4: 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
	WCH users of PRoW	n/a
	Use of open trenching	n/a



8.4.54 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 8.5 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 8.5: Matrix to determine significance

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



8.5 UNCERTAINTY AND TECHNICAL DIFFICULTIES ENCOUNTERED

FORECAST TRIP GENERATION, DISTRIBUTION AND ASSESSMENT SCENARIOS

- 8.5.1 A number of assumptions have been used in order to identify the vehicular trip generation (HGV and employee vehicles) anticipated during the construction phase of VE (18 months), which are summarised in Section 8.7, and detailed in Volume 5, Annex 8.2, create the MDS.

COVID-19 AND THE IMPACT ON PERSONAL INJURY ACCIDENT DATA

- 8.5.2 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 (which is June 2022 for the LRN and December 2021 for the SRN), for a robust assessment.

ATC INACCURACIES

- 8.5.3 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).
- 8.5.4 The method of compensating for the inaccuracies in the ATC data is described in Section 4.1.2 of Volume 5, Annex 8.1 and the resulting traffic flows are shown in Table 4.4 of Volume 5, Annex 8.1.

8.6 EXISTING ENVIRONMENT

HIGHWAY NETWORK

- 8.6.1 A detailed description of the highway network within the study area is provided in Volume 5, Annex 8.1. The highway links within the study area are set out in Table 8.6 and are shown on Figure 8.2 with a specific reference number for ease of reporting.
- 8.6.2 Some highway links that data was collected for, as reported in Volume 5, Annex 8.1, are no longer required for use in the assessment of VE due to the development of the project design after that data collection had taken place (link ID 7, 23, 24, 27, 32, 33 and 36).
- 8.6.3 Some highway links that data was collected for as reported in Volume 5, Annex 8.1, are no longer required for use in the assessment due to the development of the design of VE after the data collection has taken place (link references 7, 23 to 24, 27, 32 to 33 and 36).
- 8.6.4 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.



Table 8.6: Study area highway links

Link ID	Highway link	Reference	Highway link
1	A12 north of A120	21	Bentley Road
2	A12 south of A120	22	B1027 Frinton Road
3	A120 between A12 and A133	25	B1414 Landemere Road
4	A120 between the A133 and Harwich Road	26	Little Clacton Road
5	A120 between Harwich Road and Bentley Road	28	B1035 Thorpe Road
6	A120 between Bentley Road and B1035	29	Golden Lane
8 / 9	A133 between B1033 and B1027	30	B1034 Sneating Hall Lane
10/ 42	B1027 St John's Road/ Valley Road	31	Damant's Farm Lane
11	B1032 Clacton Road	34	Stones Green Road
12	B1033 Colchester Road (west of B1441)	35	Wolves Hall Lane
13	B1441 Clacton Road	37	Waterhouse Lane
14	B1414 Harwich Road	38	B1029 Frating Road
15	B1033 Frinton Road	39	Payne's Lane
16	B1033 Colchester Road (east of B1441)	40	Spratts Lane
17	B1035 Tendring Road	41	Barlon Road
18	B1035 Thorpe Road	43	A133 between A120 and B1033
19	B1035 (south of A120)	44	Ardleigh Road
20	B1035 Clacton Road	45	Grange Road



CONSTRUCTION ACCESS LOCATIONS

- 8.6.5 The proposed construction access locations and TCCs are listed in Table 8.7 alongside the relevant onshore ECC Route Section (as described in Volume 3, Chapter 1 and Section 2.4 of Volume 5, Annex 8.1) which each access and TCC relates to.
- 8.6.6 The proposed construction access locations and TCCs are also shown in Figure 8.3. This shows access zones (for the ECC or OnSS) within which the precise access location will be determined, post consent, as part of detailed design.

Table 8.7: Construction access locations/ TCCs

Access	TCC	Highway link	ECC Route Section
n/a	1	The Holland Haven Country Park car park access road	The beach for personnel to monitor Horizontal Directional Drilling (HDD) progress and excavate exit pit if required.
1	2	B1032 Clacton Road	ECC Route Section 1 between Landfall and the SCL.
2/ 3	3	B1032 Clacton Road	ECC Route Section 1 between Landfall and the SCL.
4	4	Thorpe Park Lane	ECC Route Section 2 between the SCL and B1033 Thorpe Road.
5	n/a	B1033 Thorpe Road	ECC Route Section 2 between the SCL and B1035 Tendring Road.
6	5	B1033 Thorpe Road	ECC Route Section 3 between B1033 Thorpe Road and B1035 Tendring Road.
7	n/a	B1034 Sneating Hall Lane	ECC Route Section 3 between B1033 Thorpe Road and B1035 Tendring Road.
8	6	B1035 Tendring Road	ECC Route Section 3 between B1033 Thorpe Road and B1035 Tendring Road.
9	n/a	B1035 Tendring Road	ECC Route Section 3 between B1033 Thorpe Road and B1035 Thorpe Road.
10/ 11	7	B1035 Thorpe Road	ECC Route Section 4 between B1035 Tendring Road and A120.
12	8	B1035 south of A120	ECC Route Section 4 between B1035 Tendring Road and A120.
13	9 (a, b and c)	B1035 Clacton Road	ECC Route Section 5 between A120 and SSA West.



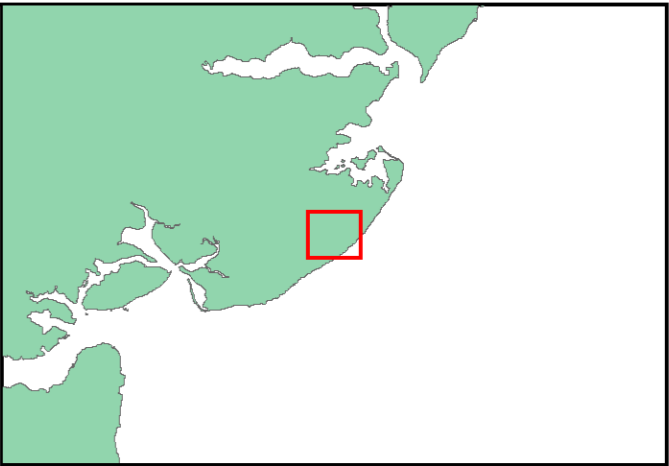
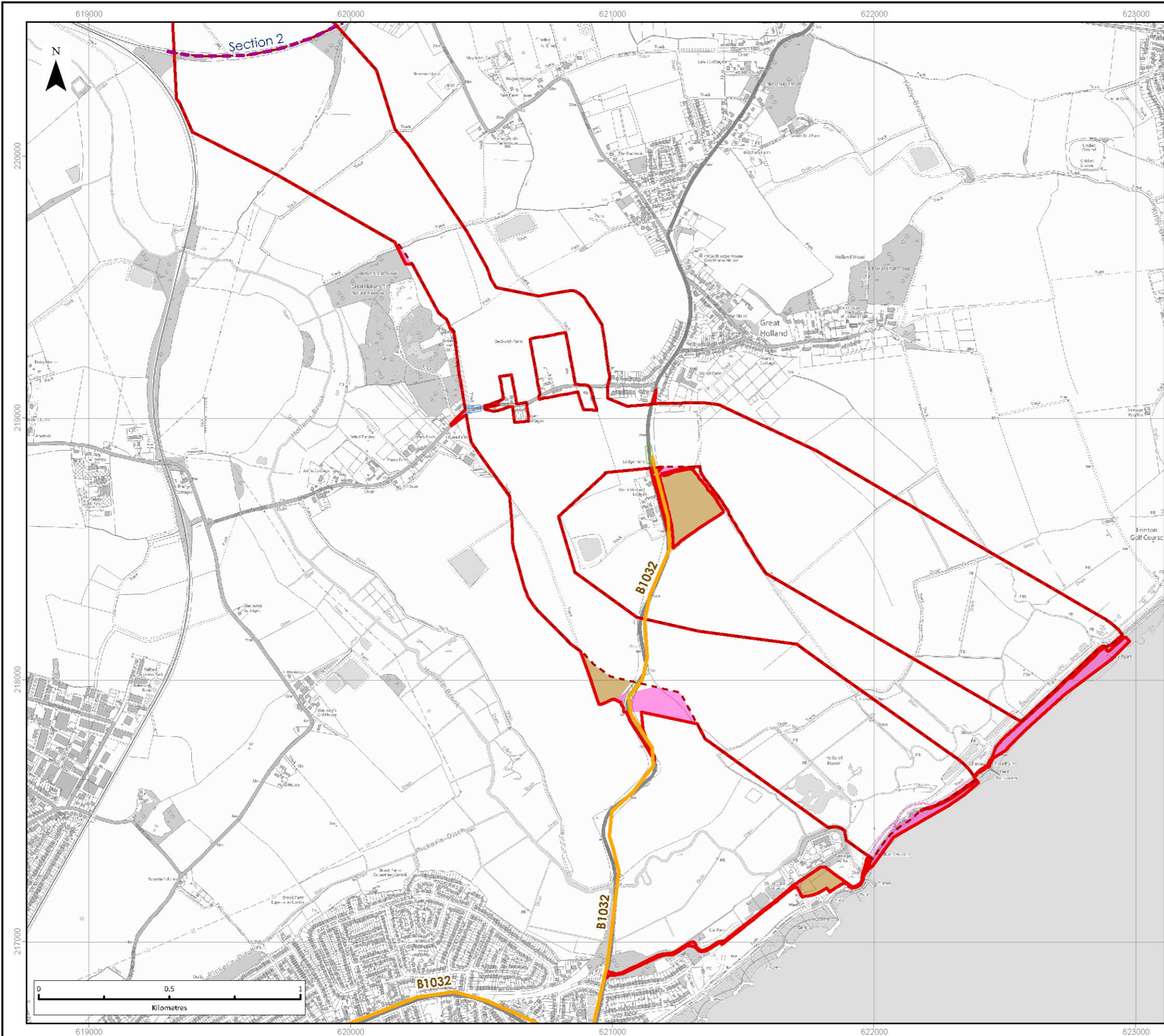
Access	TCC	Highway link	ECC Route Section
14	10a	Bentley Road	SSA East and ECC Route Section 5 between B1035 Clacton Road and SSA West.
15	10b/ 10c	Bentley Road	SSA East and ECC Route Section 5 between B1035 Clacton Road and SSA West.

HAUL ROAD CROSSING LOCATIONS

8.6.7 The proposed haul road crossing locations are listed in Table 8.8 and the relevant onshore ECC Route Section (as described in Volume 3, Chapter 1) each crossing relates to. These are also shown in Figure 8.3, which identifies crossing zones within which the precise crossing location will be determined, post consent, as part of detailed design.

Table 8.8: Haul road crossing locations

Crossing	Highway link	ECC Route Section
1	Little Clacton Road	1
2	Damant's Farm Lane	3
3	B1414 Landemere Road	3
4	Golden Lane	3
5	Whitehall Lane	4
6	Lodge Lane	4
7	Wolves Hall Lane	4
8	Stones Green Road	4
9	Payne's Lane	5
10	Spratts Lane	5
11	Barlon Road	5
12	Ardleigh Road	5
13	Grange Road	5



- LEGEND**
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Note:
 Temporary Construction Compounds labelled in Brown.
 Haul Road Crossings labelled in Dark Blue.
 Haul Road Access labelled in Dark Green.

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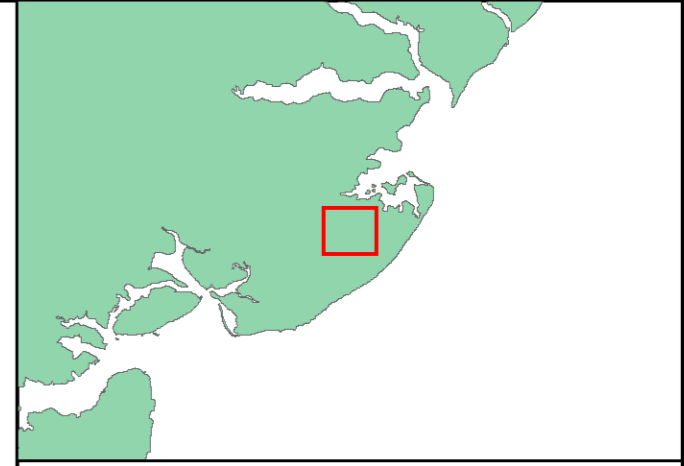
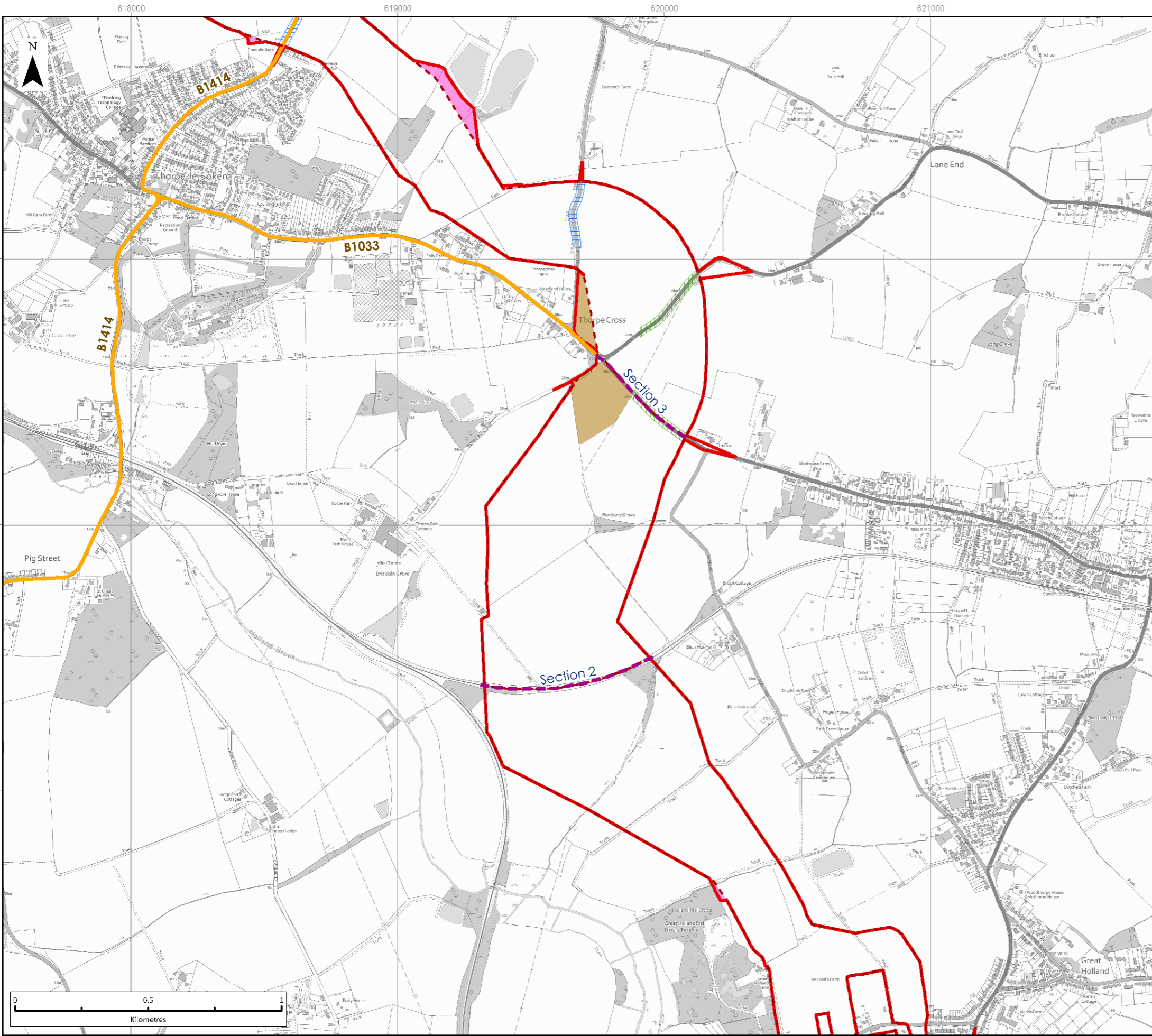
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 Construction Access, TCCs and Haul Road Crossings

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 FIGURE 8.3
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SCALE: 1:15,000 PLOT SIZE: A3 DATUM: OSGB 1936 COORDINATE SYSTEM: British National Grid





LEGEND

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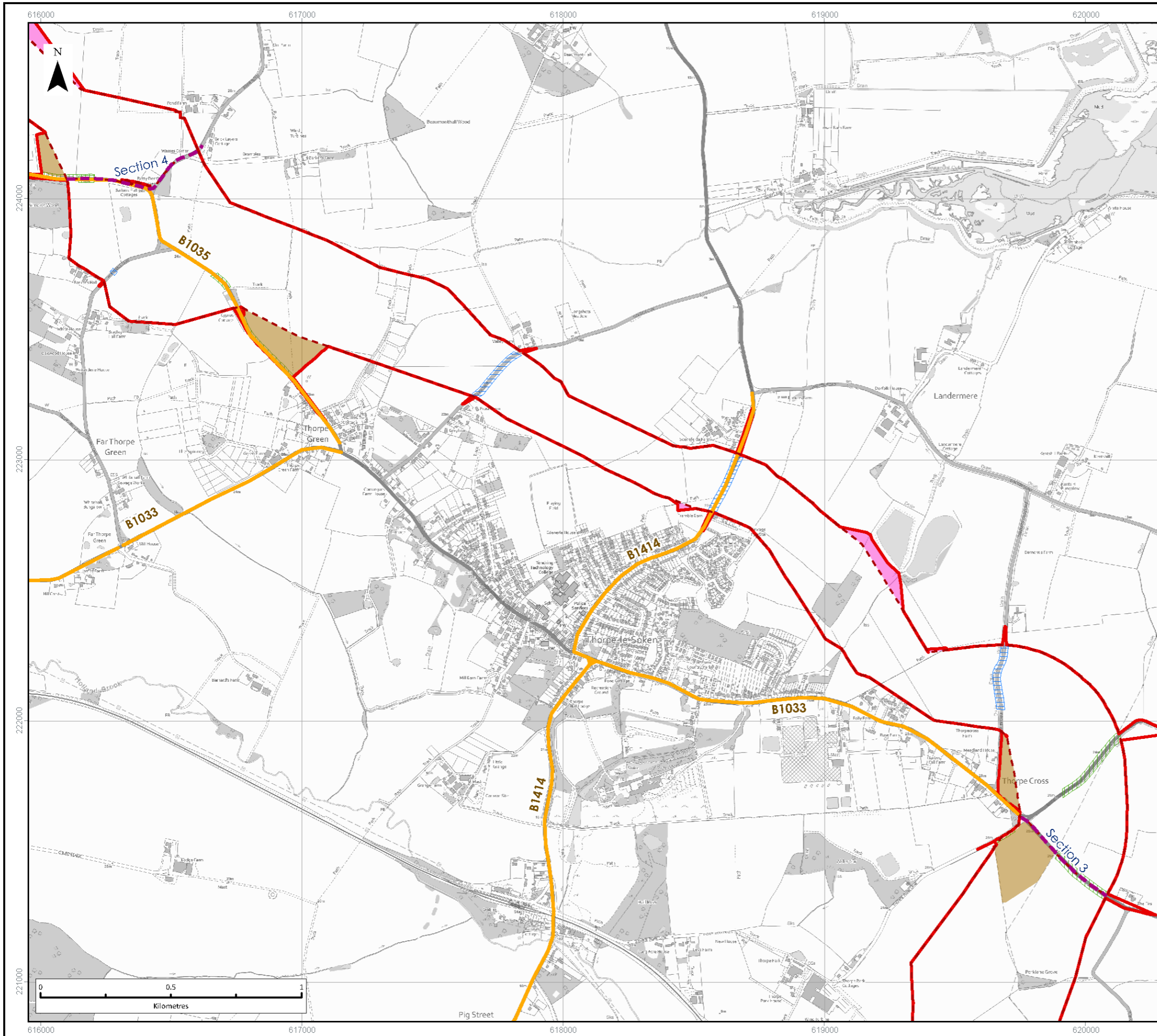
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 FIGURE 8.3
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SCALE: 1:15,000 PLOT SIZE: A3 DATUM: OSGB 1936 CO-ORDINATE SYSTEM: British National Grid





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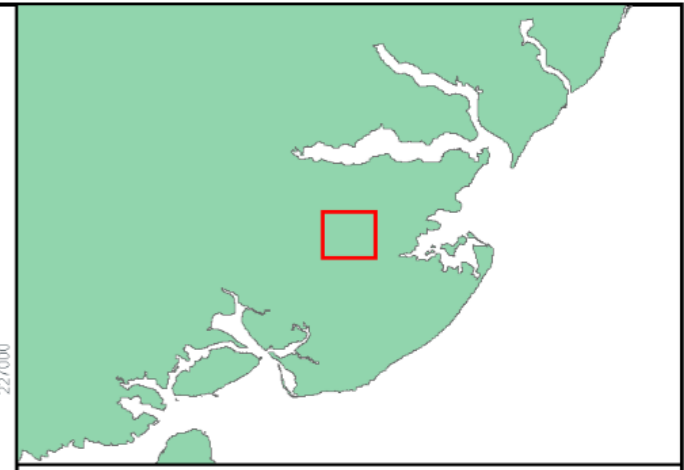
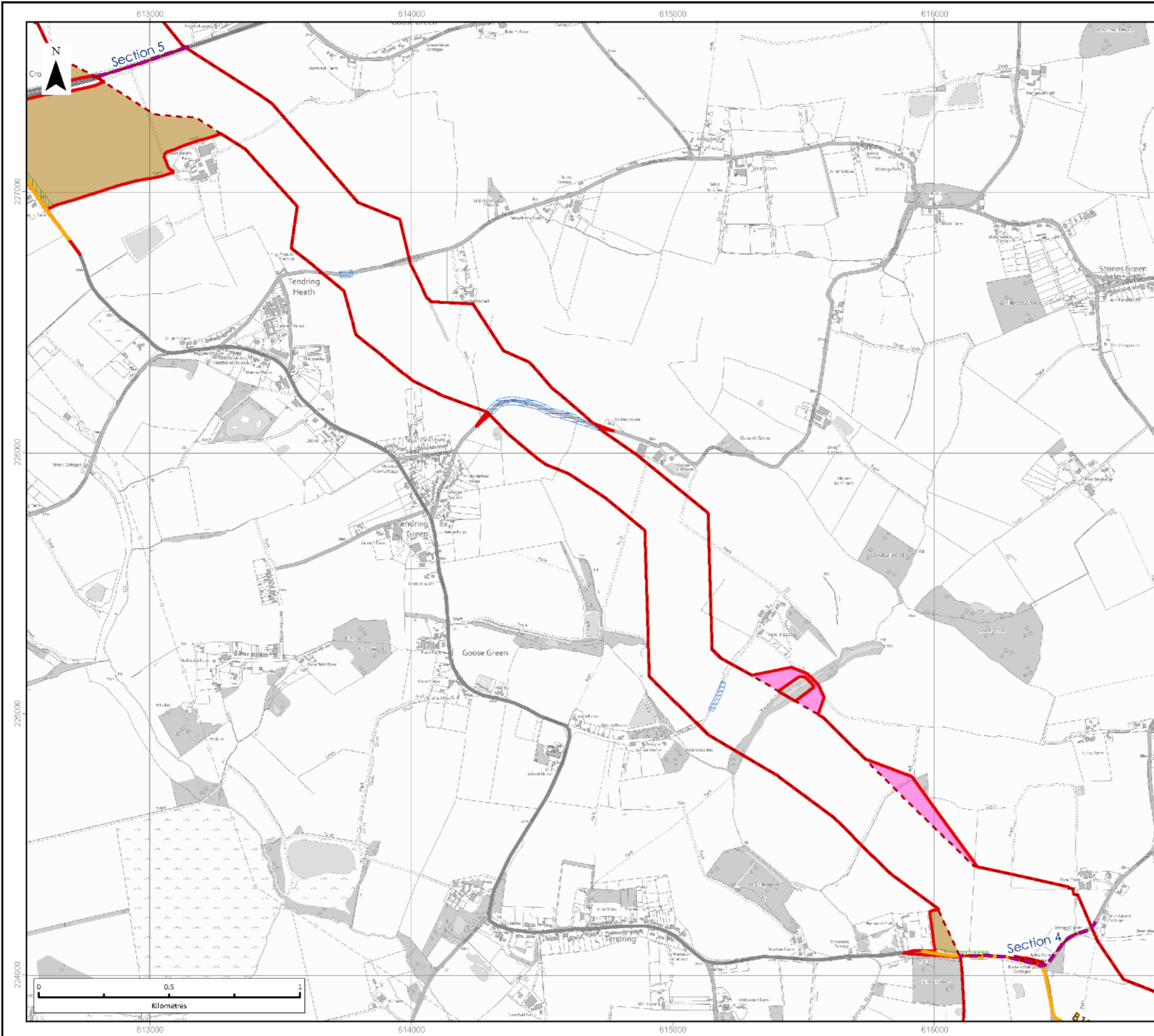
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FIGURE 8.3
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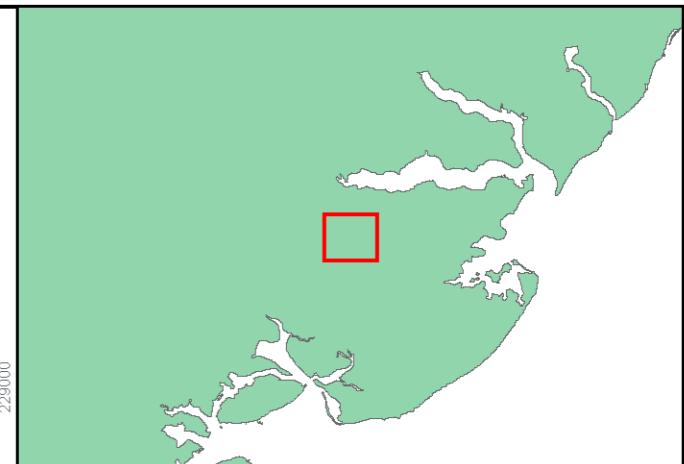
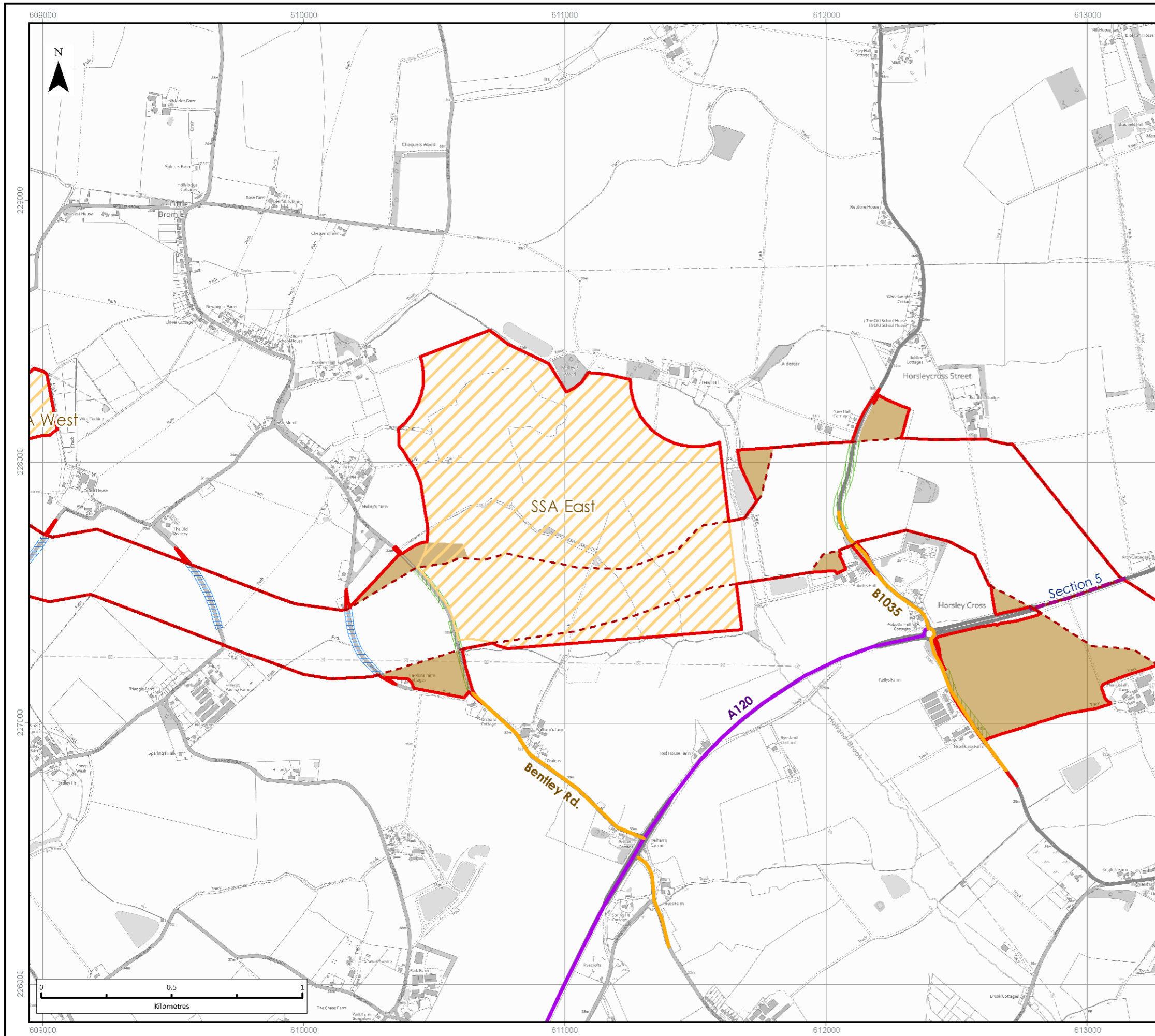
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 FIGURE 8.3
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SCALE: 1:15,000 PLOT SIZE: A3 DATUM: OSGB 1936 COORDINATE SYSTEM: British National Grid





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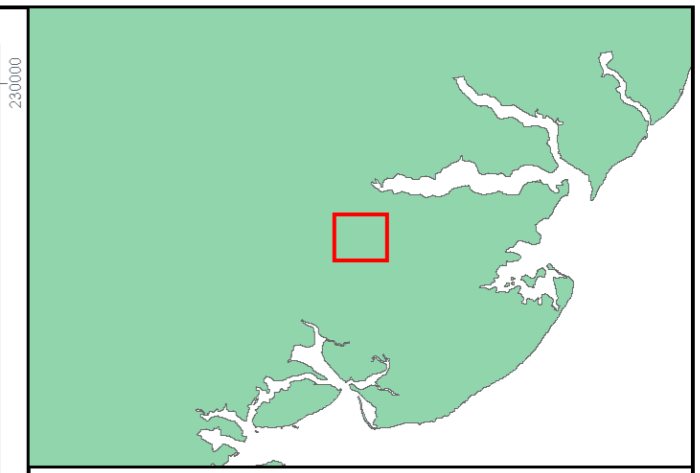
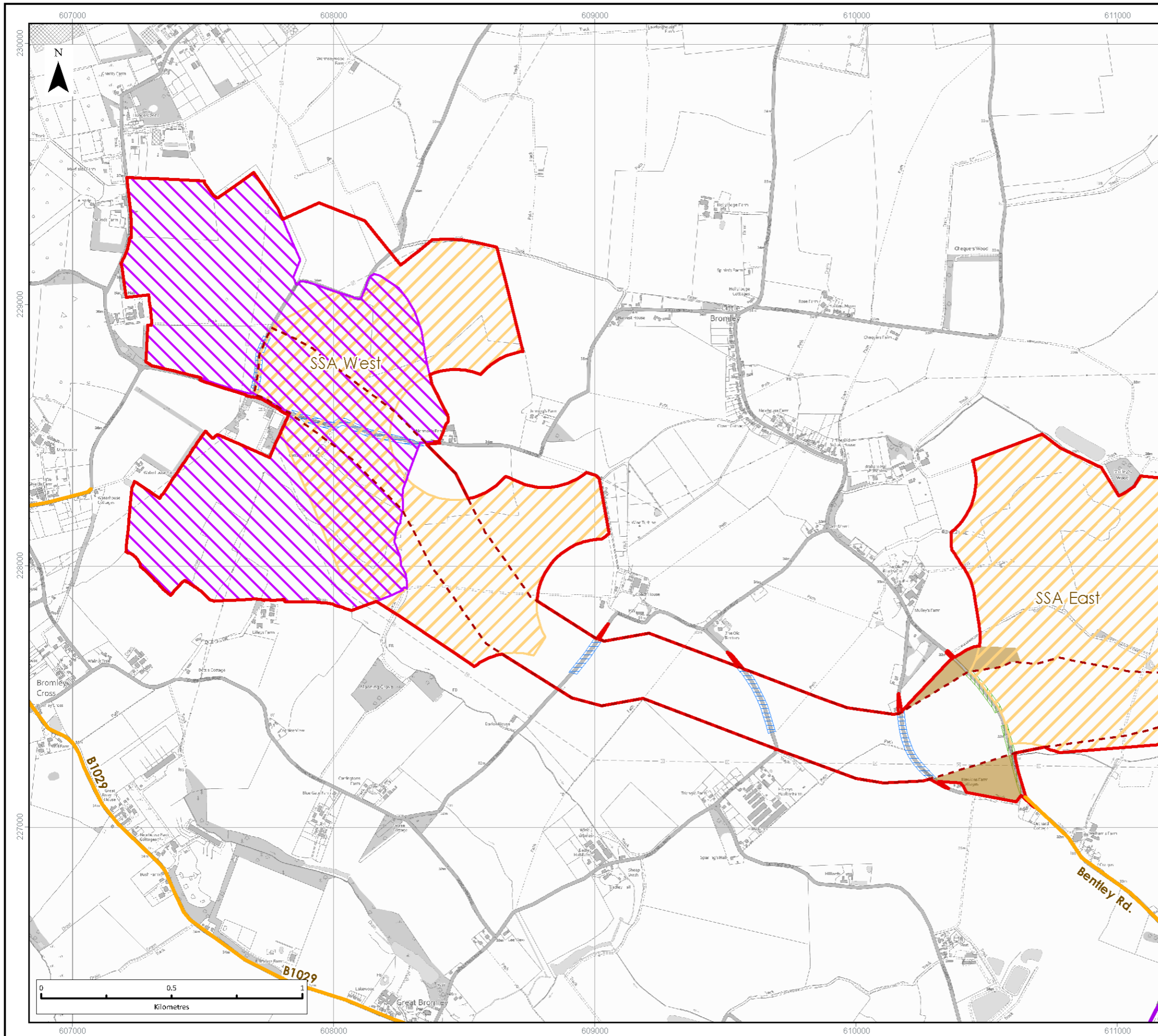
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FIGURE 8.3
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SCALE: 1:15,000 PLOT SIZE: A3 DATUM: OSGB 1936 COORDINATE SYSTEM: British National Grid





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 FIGURE 8.3
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SCALE: 1:15,000 PLOT SIZE: A3 DATUM: OSGB 1936 CO-ORDINATE SYSTEM: British National Grid



TRAFFIC FLOWS

8.6.8 An analysis of the traffic flows on the highway links within the study area (AADT and highway network peak hours) is provided in Volume 5, Annex 8.1 and is summarised below.

ORIGINAL DATA

8.6.9 The proposed highway network that is likely to be affected during the construction phase of VE is set out in Table 8.9, which also sets out the 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 5, Annex 8.1 and Paragraph 8.5.3 of this chapter.

8.6.10 The data locations are shown in Figure 8.4



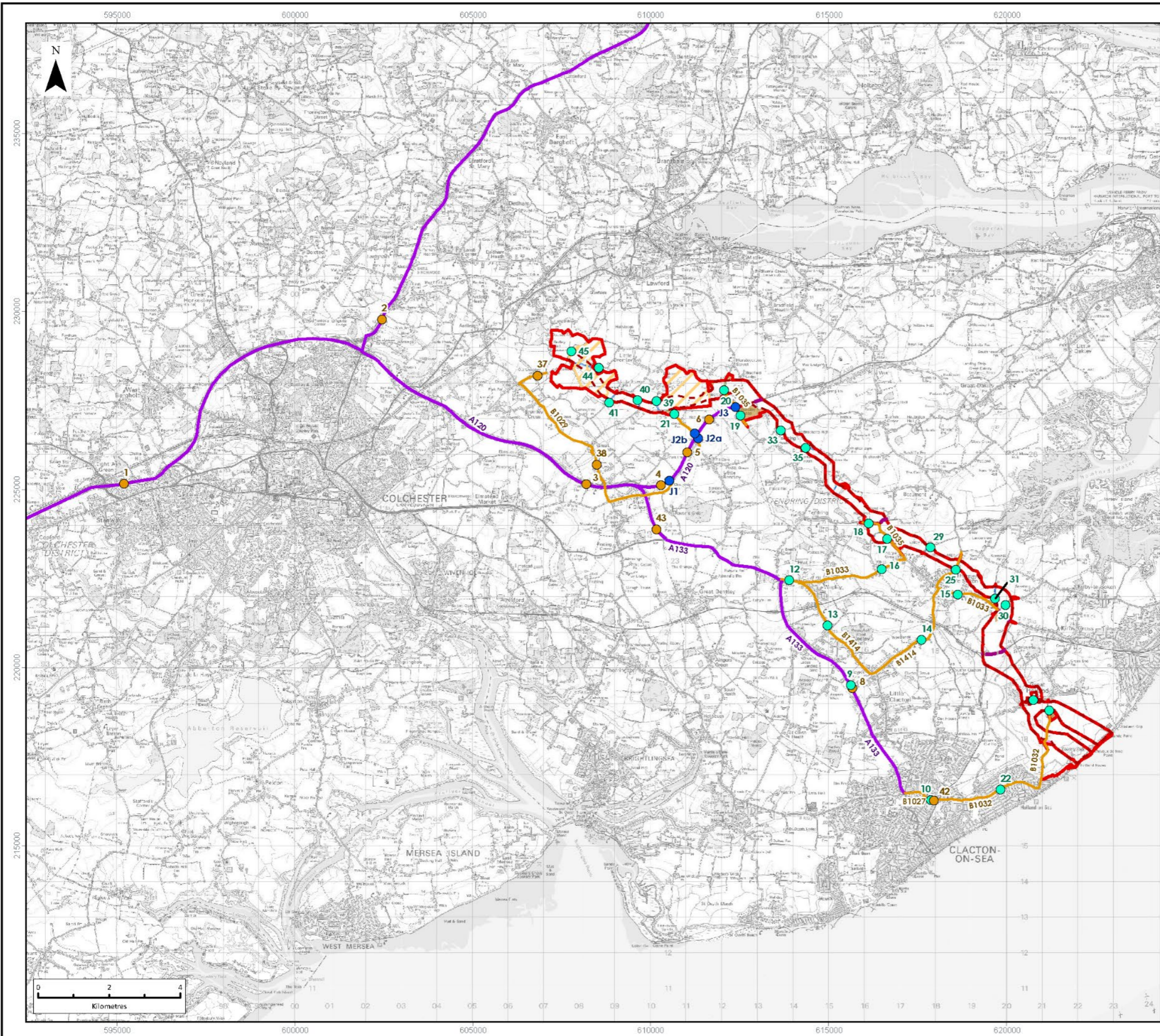
Table 8.9: Highway links AADT

Link ID	Source	Year	Highway link	AADT Total vehicles	HGVs	HGV (%)
1	DfT	2019	A12 north of A120	60,190	5,704	9.5
2	DfT	2019	A12 south of A120	70,063	5,832	8.6
3	DfT	2019	A120 between A12 and A133	44,278	2,685	6.1
4	DfT	2019	A120 between the A133 and Harwich Road	12,248	1,402	11.4
5	DfT ⁱ	2019	A120 between Harwich Road and Bentley Road	12,405	1,497	12.1
6	DfT	2019	A120 between Bentley Road and B1035	12,561	1,591	12.7
8	ATC	2022	A133 between B1033 and B1027	22,861	780	3.4
10	ATC	2022	B1027 St John's Road/ Valley Road	13,617	212	1.6
11	ATC	2022	B1032 Clacton Road	6,798	119	1.7
12	ATC	2022	B1033 Colchester Road (west of B1441)	14,046	290	2.1
13	ATC	2022	B1441 Clacton Road	5,584	143	2.6
14	ATC	2022	B1414 Harwich Road	5,214	113	2.2
15	ATC	2022	B1033 Frinton Road	11,511	211	1.8
16	ATC	2022	B1033 Colchester Road (east of B1441)	9,415	230	2.4
17	ATC	2022	B1035 Tendring Road	1,478	41	2.7
18	ATC	2022	B1035 Thorpe Road	2,133	49	2.3
19,	ATC	2022	B1035 (south of A120)	5,794	116	2.2
20	ATC	2022	B1035 Clacton Road	7,869	193	2.5

ⁱ Estimated from Sites 4 and 6.



Link ID	Source	Year	Highway link	AADT Total vehicles	HGVs	HGV (%)
21	ATC	2022	Bentley Road	887	28	3.2
22	ATC	2022	B1027 Frinton Road	7,079	137	1.9
25	ATC	2022	B1414 Landemere Road	3,307	67	2.0
26	ATC	2022	Little Clacton Road	3,768	70	1.9
29	ATC	2022	Golden Lane	2,906	59	2.0
30	ATC	2022	B1034 Sneating Hall Lane	363	10	2.8
31	ATC	2022	Damant's Farm Lane	94	4	3.8
34	ATC	2022	Stones Green Road	199	6	3.1
35	ATC	2022	Wolves Hall Lane	87	3	2.9
37	DfT	2019	Waterhouse Lane	418	12	2.9
38	DfT	2019	B1029 Frating Road	2,169	58	2.7
39	ATC	2022	Payne's Lane	20	0	0.0
40	ATC	2022	Spratts Lane	84	1	1.2
41	ATC	2022	Barlon Road	83	1	1.2
43	DfT	2019	A133 between A120 and B1033	32,030	1,283	4.0
44	ATC	2022	Ardleigh Road	74	2	2.7
45	ATC	2022	Grange Road	35	1	2.9



LEGEND

- Onshore PIER Red Line Boundary
- Onshore Export Cable Corridor
- Onshore Cable Route Section Division
- Onshore Substation Areas of Search
- Temporary Construction Compounds
- Works Access Required
- Haul Road Crossings
- Haul Road Access
- Core Access Route
- Local Access Route to Temporary Construction Compound
- Existing Data – Department for Transport (DfT) Road Traffic Data Website
- New Data - Automatic Traffic Count (ATC)
- New Data - Junction Turning Count

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PROJECT TITLE:
 FIVE ESTUARIES OFFSHORE WINDFARM

DRAWING TITLE:
 Baseline Traffic Data

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 FIGURE 8.4

SCALE: 1:110,000 PLOT SIZE: A3 DATUM: OSGB 1936 COORDINATE SYSTEM: British National Grid



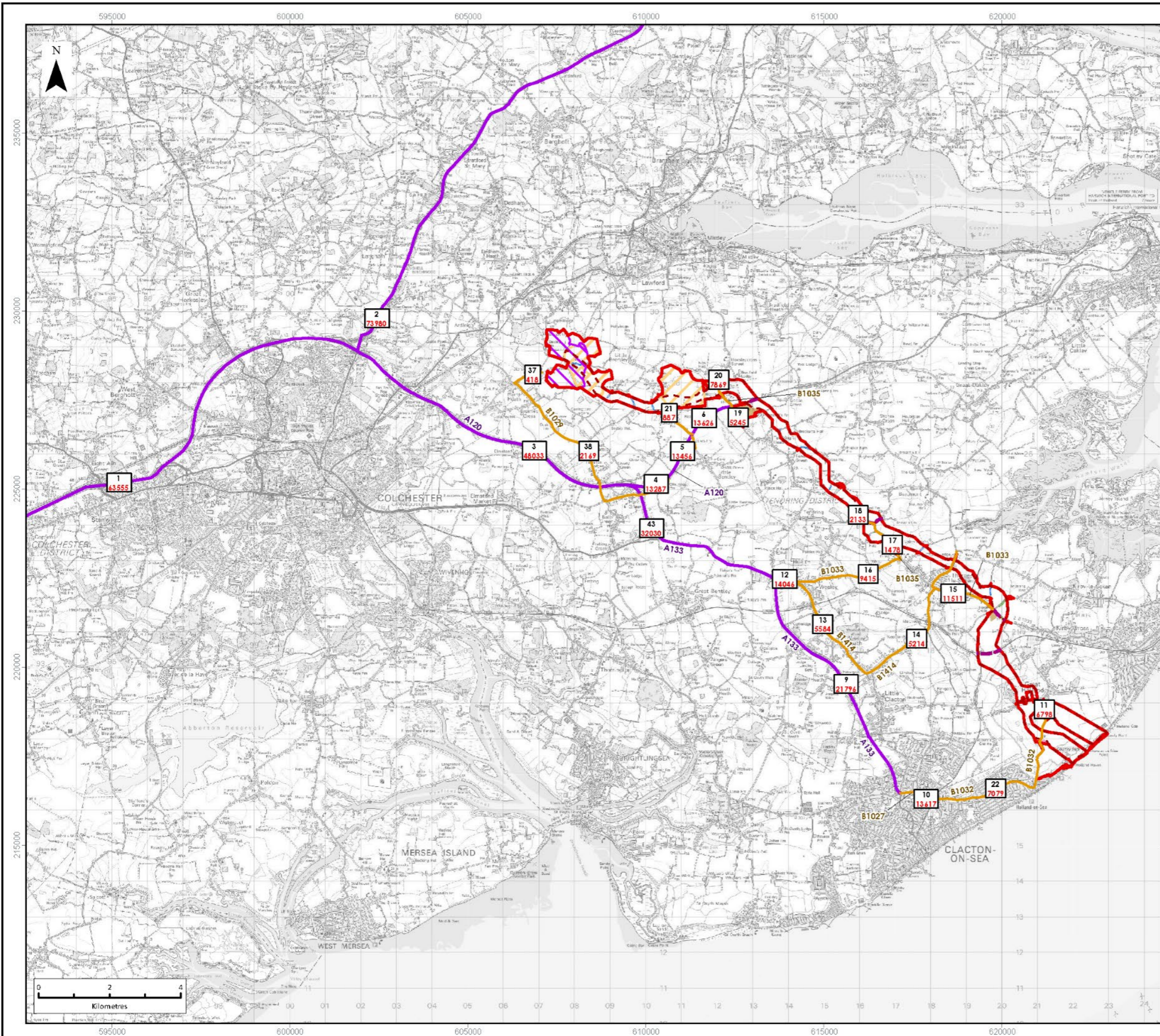


BASE YEAR 2022

- 8.6.11 The Trip End Model Presentation Program (TEMPRO) database, which determines background traffic growth on an annual basis for a specified time period, has been used to factor the DfT data on the A12 and A120 to a base year of 2022. The DfT data on the A133 has not been factored as the 2022 ATC traffic flows are lower than the DfT data at the same location.
- 8.6.12 Traffic growth rates have been applied to the observed traffic flows in Table 8.10 using the DfT software TEMPRO to create base 2022 traffic flows.
- 8.6.13 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.
- 8.6.14 The TEMPRO factors (2019 to 2022):
- > A12 – 1.0559; and
 - > A120 – 1.0848.
- 8.6.15 The 2022 year AADT flows for the DfT data are shown in Table 8.10 and the 2022 year AADT flows for all highway links in the study area are shown in Figure 8.5 and Figure 8.6.

Table 8.10: Highway links AADT (A12/ A120 data – 2022 base year)

Reference	Location	AADT		HGV (%)
		Total vehicles	HGVs	
1	A12 north of A120	63,555	6,023	9.5
2	A12 south of A120	73,980	6,327	8.6
3	A120 between A12 and A133	48,033	2,913	6.1
4	A120 between the A133 and Harwich Road	13,287	1,402	10.6
5	A120 between Harwich Road and Bentley Road	13,456	1,546	11.4
6	A120 between Bentley Road and B1035	13,626	1,726	12.7
37	Waterhouse Lane	418	12	2.9
38	B1029 Frating Road	2,169	58	2.7
43	A133 between A120 and B1033	32,030	1,283	4.0



LEGEND

- Onshore PEIR Red Line Boundary
- Onshore Export Cable Corridor
- Onshore Cable Route Section Division
- National Grid Area of Search
- Onshore Substation Areas of Search
- Temporary Construction Compounds
- Works Access Required
- Haul Road Crossings
- Haul Road Access
- Core Access Route
- Local Access Route to Temporary Construction Compound
- XX Link Flow Count Location
- XX 2-way Traffic Flow

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FIVE ESTUARIES OFFSHORE WIND FARM

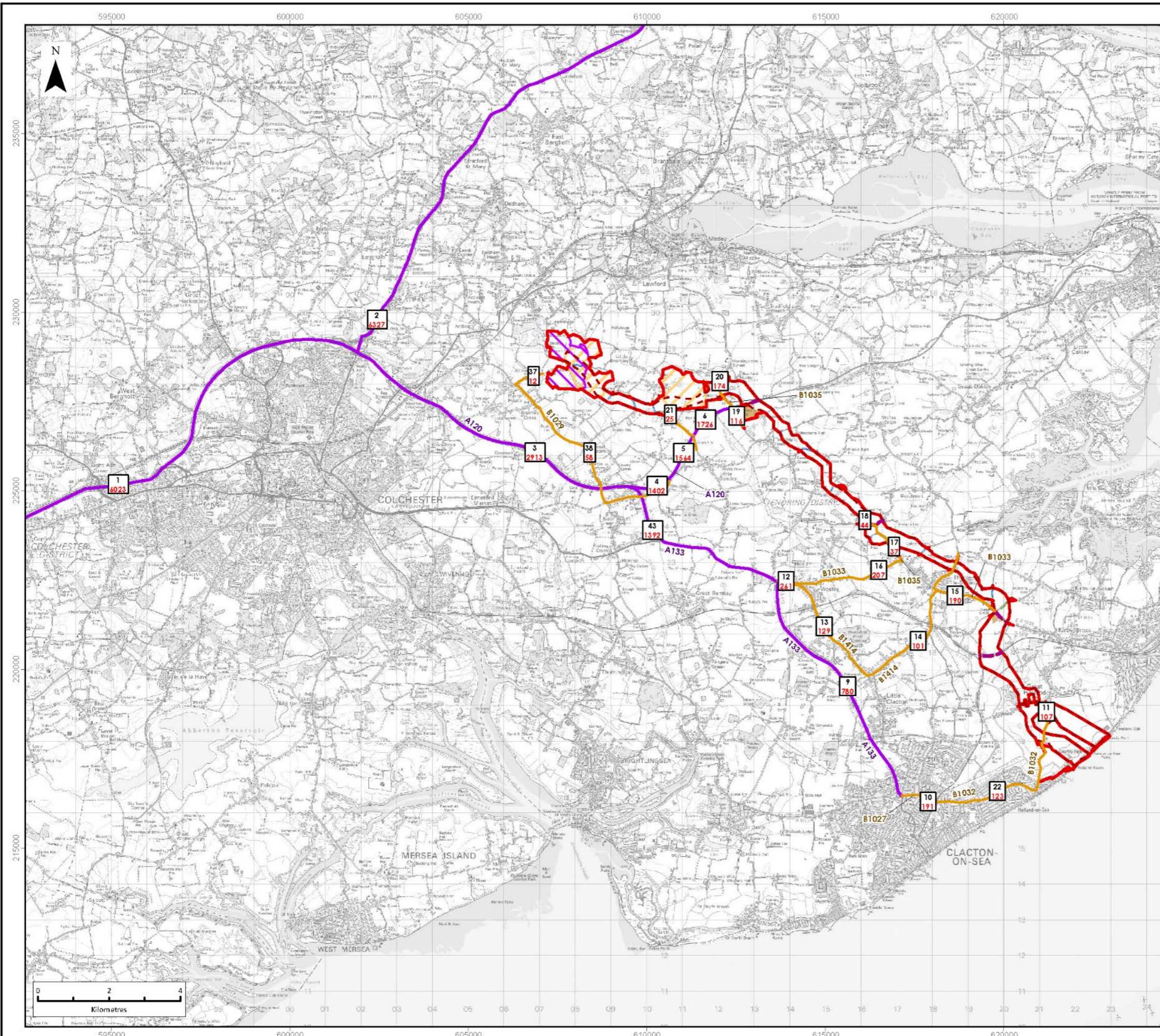
DRAWING TITLE:
2022 AADT (Total)

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FIGURE 8.5

SCALE: 1:110,000 PLOT SIZE: A3 DATUM: OSGB 1936 COORDINATE SYSTEM: British National Grid





LEGEND

- Onshore PIER Red Line Boundary
- Onshore Export Cable Corridor
- Onshore Cable Route Section Division
- National Grid Area of Search
- Onshore Substation Areas of Search
- Temporary Construction Compounds
- Works Access Required
- Haul Road Crossings
- Haul Road Access
- Core Access Route
- Local Access Route to Temporary Construction Compound
- XX Link Flow Count Location
- XX 2-way Traffic Flow

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FIVE ESTUARIES OFFSHORE WINDFARM

DRAWING TITLE:
2022 AADT (HGVs)

VER	DATE	REMARKS	Drawn	Checked
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DRAWING NUMBER:
FIGURE 8.6

SCALE: 1:110,000 PLOT SIZE: A3 DATUM: OSGB 1936 COORDINATE SYSTEM: British National Grid





- 8.6.16 In order to assess the potential effects of the construction phase of VE on driver severance and delay, the peak hours on the highway network have been identified using the existing DfT and ATC data.
- 8.6.17 The peak hours on the highway network within the study area are defined as (due to the variations in the specific peak hour across the highway network):
- > AM Peak – 07:00 to 09:00; and
 - > PM Peak – 16:15 to 18:15.

ROAD SAFETY

- 8.6.18 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.
- 8.6.19 The review, which is provided in detail in Volume 5, Annex 8.1 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

- 8.6.20 An analysis of the PIA data on the LRN in the study area has been undertaken, informed by data for a period of seven years (1 July 2015 and 30 June 2022) obtained from Essex County Council.
- 8.6.21 The analysis of PIA rates concluded that the following links have a significantly higher rate than the 2019 GB rate, per billion vehicle km² (425.5):
- > Bentley Road;
 - > B1027 St. Johns Road/ Valley Road (west of the SDL);
 - > B1441 Weeley Bypass/ Clacton Road/ Weeley Road; and
 - > B1414 Harwich Road/ Station Road.
- 8.6.22 The analysis concluded that the following links have a marginally higher accident rate than the 2019 GB rate:
- > B1027 Valley Road (east of the SDL); and
 - > B1032 Frinton Road.
- 8.6.23 The other highway links within the study area all have a PIA rate similar to, or less than, the 2019 GB rate:

² Reported road casualties in Great Britain: 2019 annual report, DfT (September 2020)



- 8.6.24 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).
- 8.6.25 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.

STRATEGIC ROAD NETWORK (SRN)

- 8.6.26 An analysis of the PIA data on the SRN, informed by data for a period of seven years (1 January 2015 to 31 December 2021) 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.
- 8.6.27 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.
- 8.6.28 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.
- 8.6.29 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.
- 8.6.30 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.



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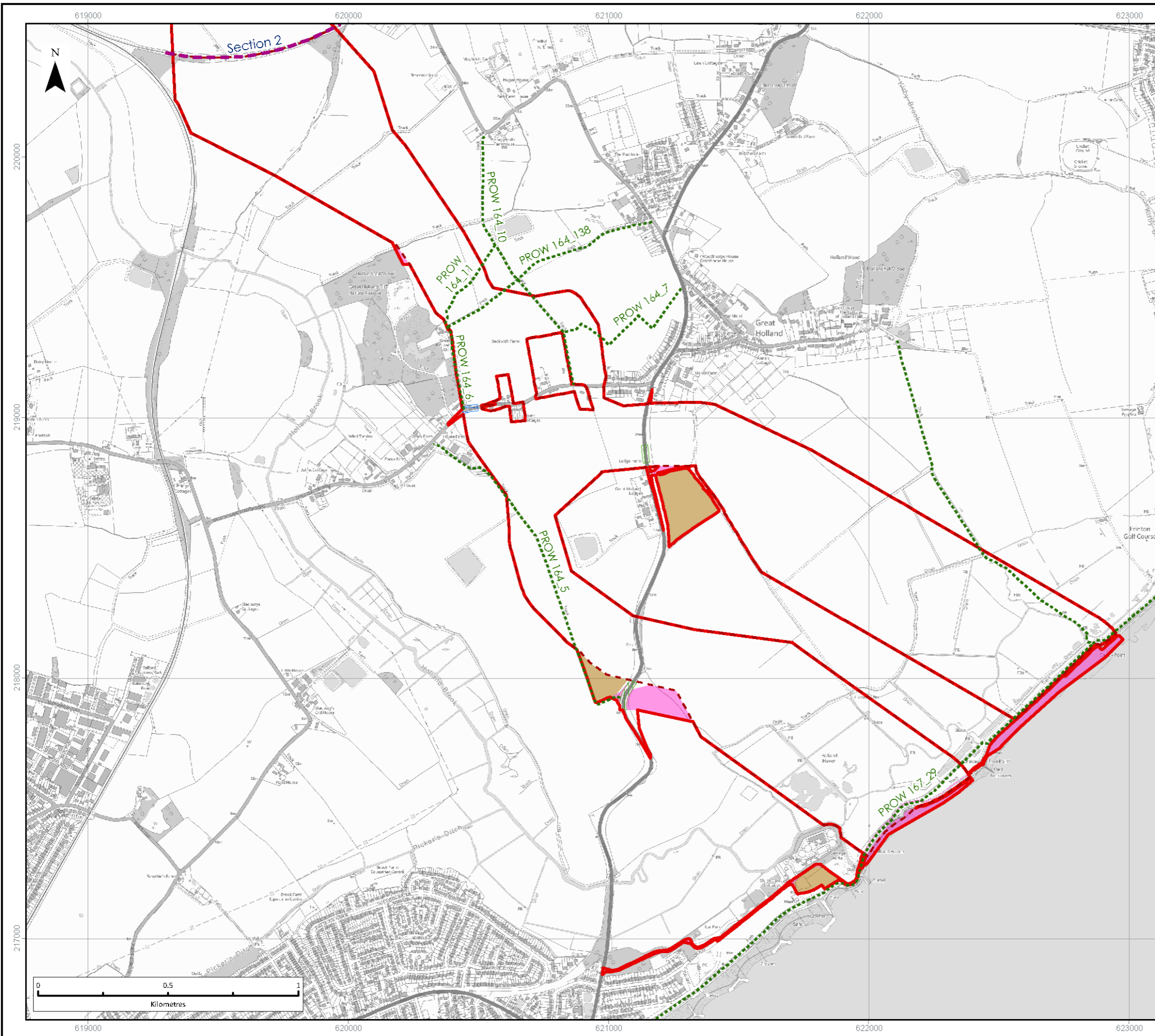
The PRowS within the study area (those that would be impacted directly and indirectly) are described in Volume 5, Annex 8.1. A summary of the PRowS is provided in Table 8.11: illustrated in Figure 8.7.

Table 8.11: PRowS by ECC route section

PRoW	Designation	ECC Route Section	Baseline assessment
167_29	Footpath	1	Coastal path, very well used, particularly in the summer months. Would be crossed by vehicles accessing the beach
164_5	Footpath	1	Would be crossed by the ECC/ haul road
164_6	Footpath	1	Adjacent to haul road crossing and edge of ECC
164_11	Footpath	1	Would be crossed by the ECC/ haul road
164_10	Footpath	1	
164_7	Footpath	1	
164_138	Footpath	1	
180_13	Footpath	3	Would be crossed by the ECC/ haul road
180_7	Footpath	3	Small section would be crossed by an off-route haul road and could be crossed by the ECC/ haul road
180_5	Bridleway	3	Small section could be crossed by the ECC/ haul road
180_4	Footpath	3	
180_3	Footpath	3	Would be crossed by the ECC/ haul road
180_1	Footpath	3	Would be crossed by the ECC/ haul road and through the TCC
159_18	Footpath	3	Would be crossed by the ECC/ haul road
180_18	Footpath	3	
179_22	Footpath	4	Would be crossed by an off-route haul road and the ECC/ haul road
179_8	Footpath	4	Would be crossed by an off-route haul road



PRoW	Designation	ECC Route Section	Baseline assessment
179_3	Footpath	4	Would be crossed by the ECC/ haul road
179_1	Footpath	4	
183_31	Footpath	4	
183_32	Footpath	4	
183_15	Footpath	4	Would be through the TCC
172_20	Footpath	5	Through SSA East
172_21	Footpath	5	Small section could be crossed by the ECC / haul road
172_17	Footpath	5	Would be crossed by the ECC/ haul road
172_16	Footpath	5	Through SSA West
166_3	Footpath	5	
172_15	Footpath	5	
170_57	Byway	5	



- LEGEND**
- Onshore Red Line Boundary
 - Onshore Export Cable Corridor
 - Onshore Cable Route Section Division
 - Temporary Construction Compounds
 - Works Access Required
 - Haul Road Crossings
 - Haul Road Access
 - Public Right of Way
 - Footpath

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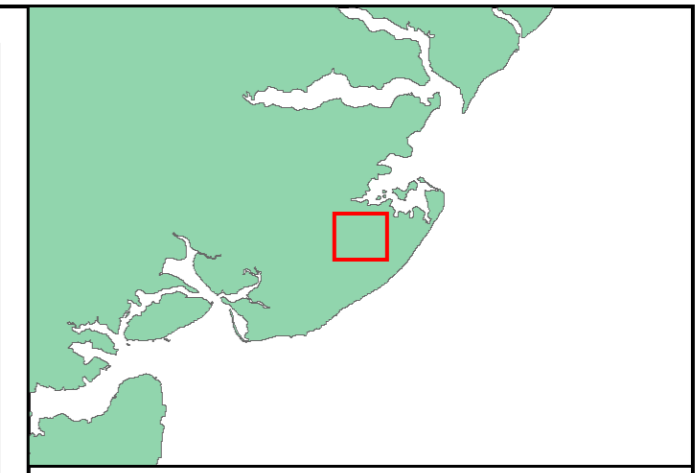
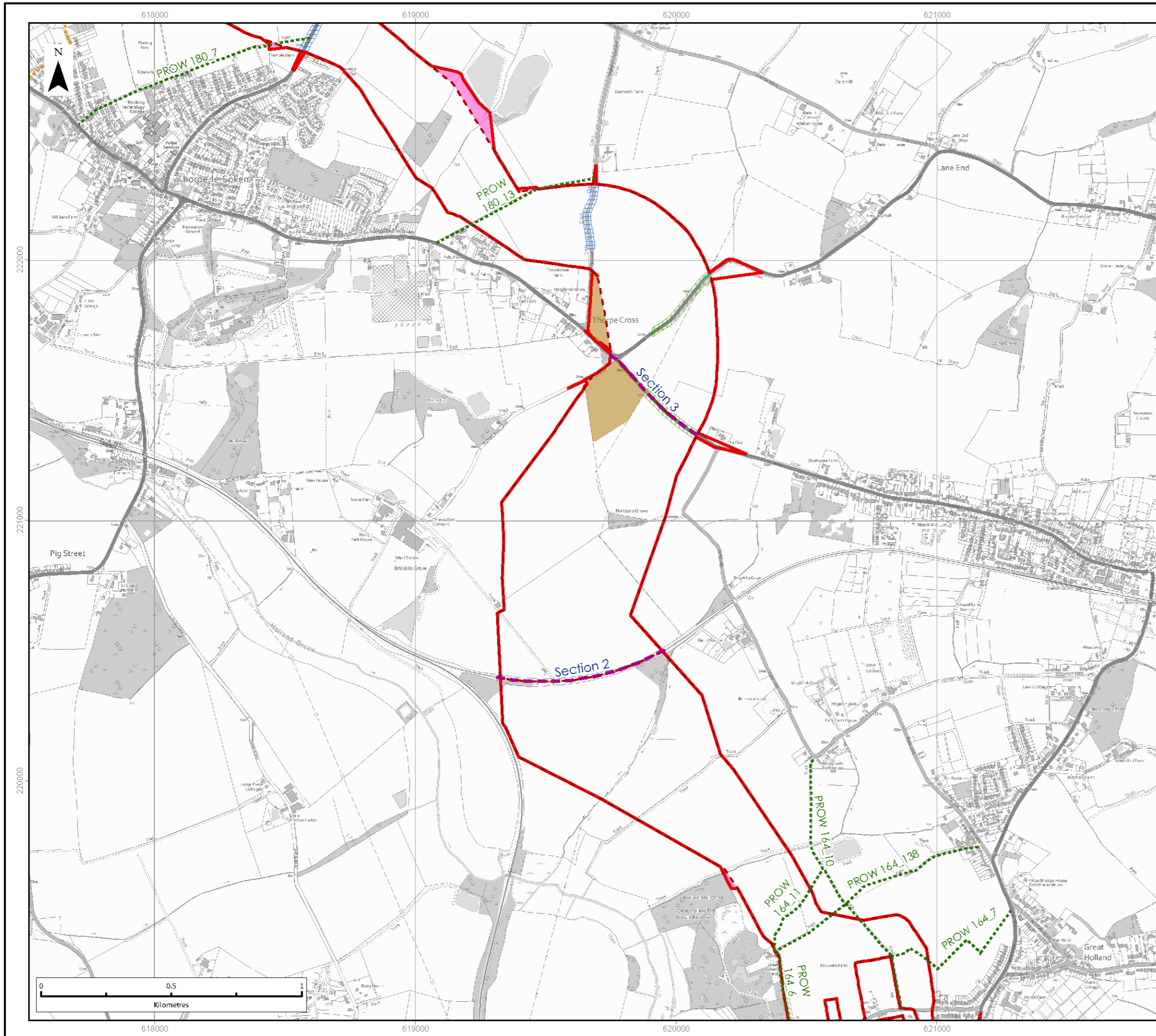
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FIGURE 8.7
 Page 1 of 6

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





LEGEND

- ▭ Onshore Red Line Boundary
- - - Onshore Export Cable Corridor
- ▭ Onshore Cable Route Section Division
- ▭ Temporary Construction Compounds
- ▭ Works Access Required
- ▭ Haul Road Crossings
- ▭ Haul Road Access
- - - Public Right of Way
- - - Footpath
- - - Bridleway

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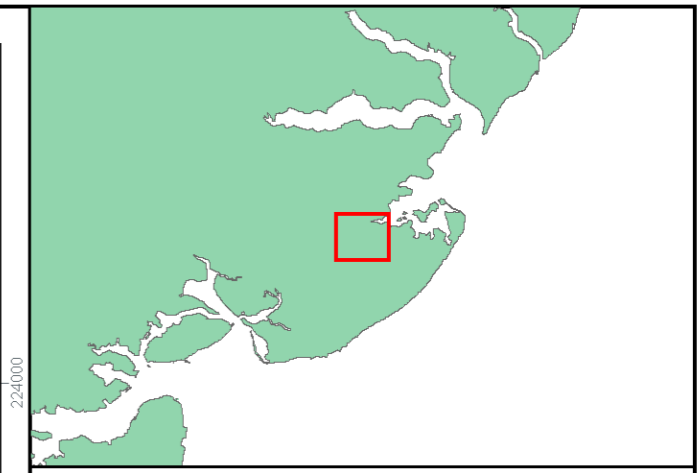
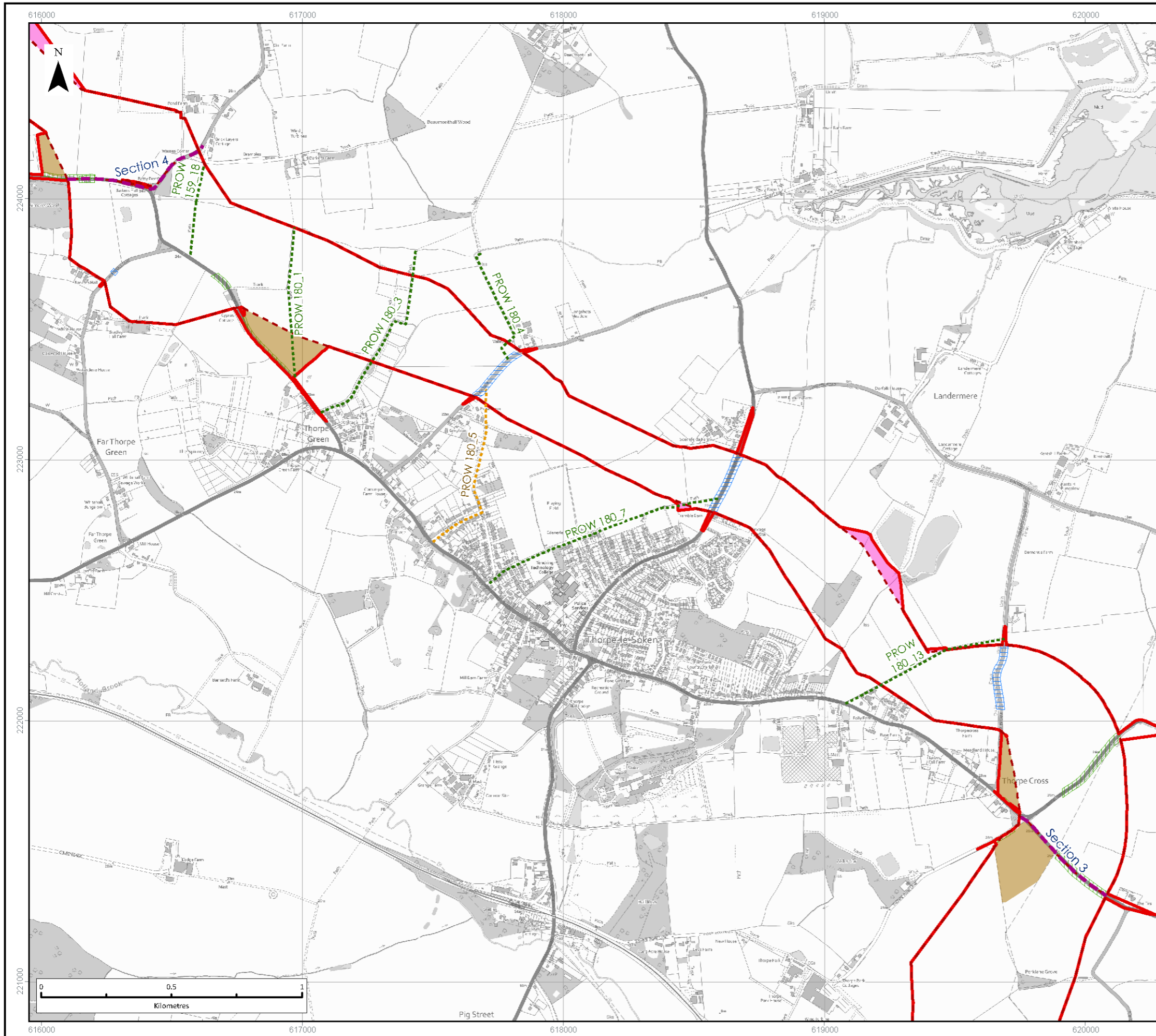
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 FIGURE 8.7
 Page 2 of 6

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





LEGEND

- ▬ Onshore Red Line Boundary
- Onshore Export Cable Corridor
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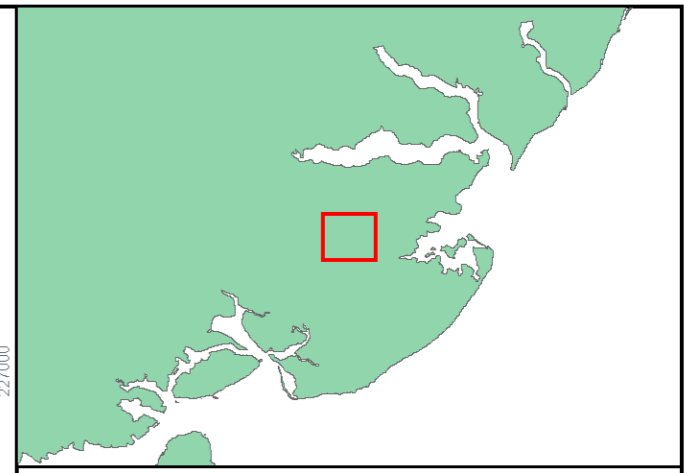
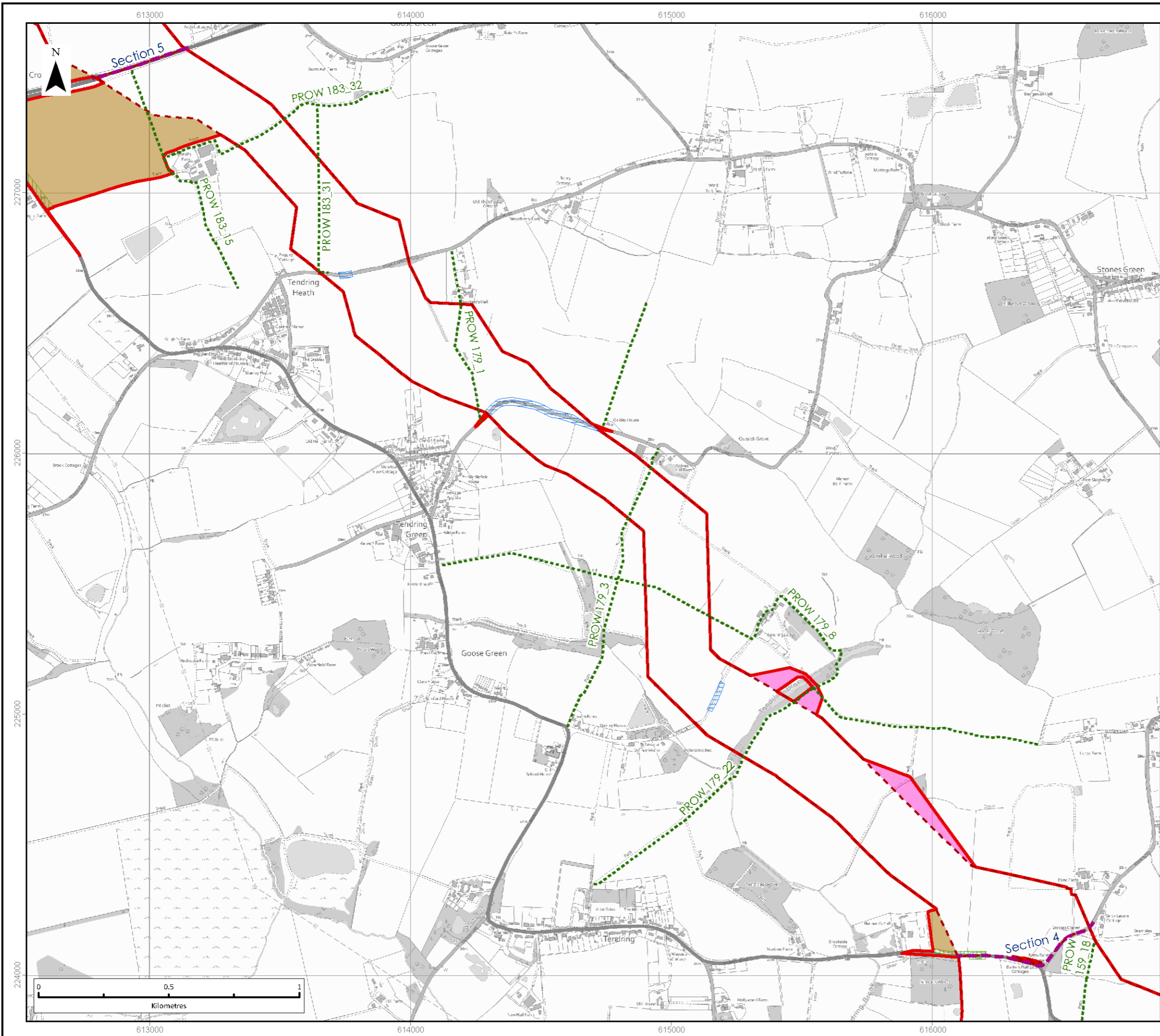
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 FIGURE 8.7
 Page 3 of 6

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





LEGEND

- Onshore Red Line Boundary
- Onshore Export Cable Corridor
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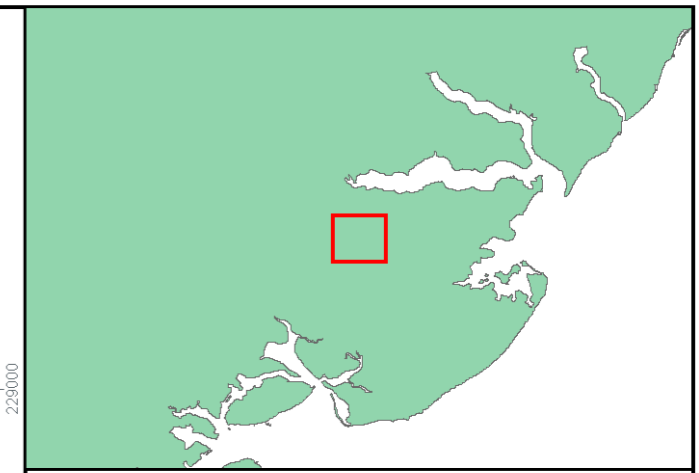
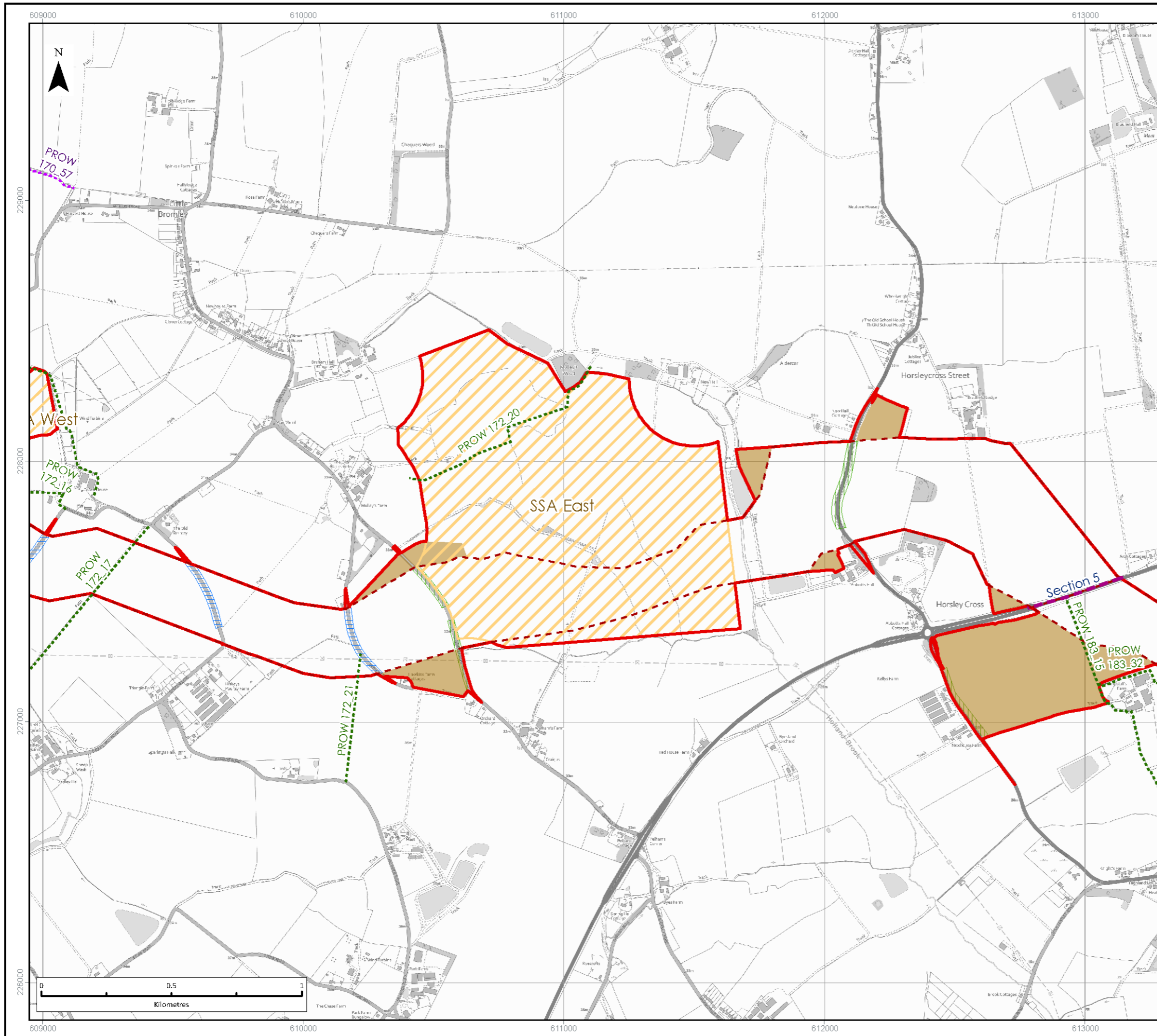
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 FIGURE 8.7
 Page 4 of 6

SCALE: 1:15,000 PLOT SIZE: A3 DATUM: OSGB 1936 CO-ORDINATE SYSTEM: British National Grid





LEGEND

- Onshore Red Line Boundary
- Onshore Export Cable Corridor
- Onshore Cable Route Section Division
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- Byway

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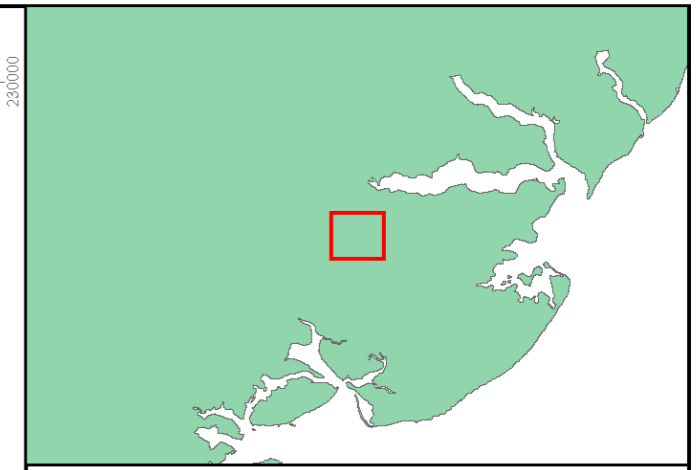
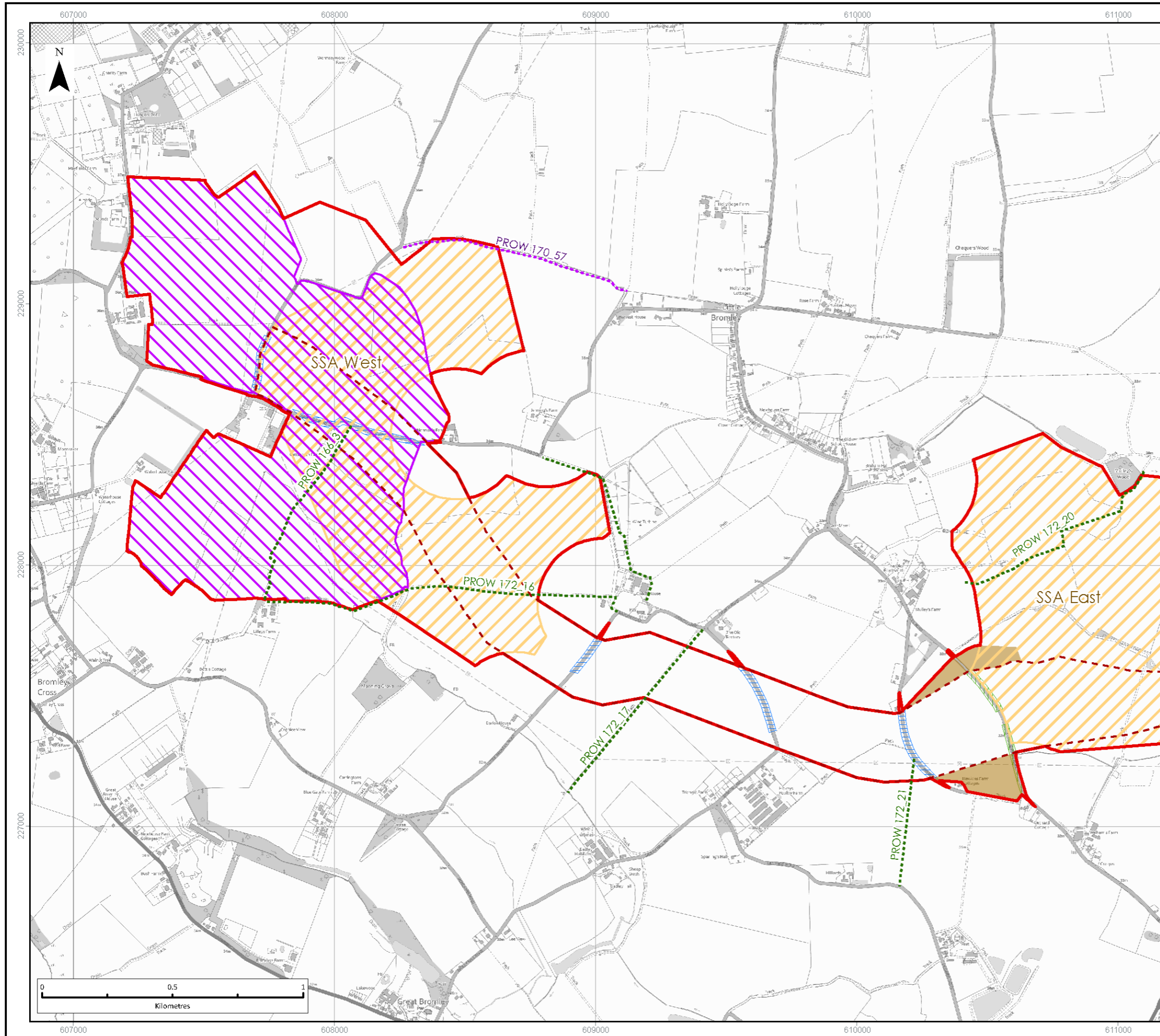
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 FIGURE 8.7
 Page 5 of 6

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





LEGEND

- ▭ Onshore Red Line Boundary
- Onshore Export Cable Corridor
- National Grid Area of Search
- Onshore Substation Areas of Search
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- Haul Road Access

Public Right of Way

- - - Footpath
- - - Byway

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 FIGURE 8.7
 Page 6 of 6

SCALE: 1:15,000 PLOT SIZE: A3 DATUM: OSGB 1936 CO-ORDINATE SYSTEM: British National Grid





SENSITIVE RECEPTORS

HIGHWAY LINKS (INCREASE IN TRAFFIC)

- 8.6.31 Using the review of the construction access routes in Volume 5, Annex 8.1, including the summary of road safety in Paragraphs 8.6.17 to 8.6.31 of this chapter, Table 8.12 identifies the sensitivity of each highway link to changes in the volume of traffic, based on the criteria in Table 8.4 and professional judgement.



Table 8.12: Highway link sensitivity (increase in traffic)

Reference	Highway link	Review of link sensitivity	Sensitivity
1/ 2	A12	SRN, with low sensitivity to traffic flows, no relevant clusters of accidents identified	Negligible
3 to 7	A120		
8/ 43	A133	Core route for access in the study area with some sensitivity to traffic flow	Low
10	B1027 Valley Road	Shopping area with roadside frontage and PIA clusters identified, Clacton Ambulance Station	High
11	B1032 Clacton Road	Access route to open space / tourist facilities with some sensitivity to traffic flow	Low
12	B1033 Colchester Road (west of B1441)	Congestion	Medium
13	B1441 Clacton Road	Schools at Weeley, Weeley Fire Station, part of a promoted cycle route	High
14	B1414 Harwich Road	Residential, passes through edge of Thorpe-le-Soken	Medium
15	B1033 Abbey Street/ Frinton Road/ Thorpe Road	Edge of Thorpe-le-Soken, playground	High
16	B1033 Colchester Road (east of B1441)	Weeley Ambulance Station, new school proposed, part of a promoted cycle route	High
17	B1035 Tendring Road	Residential properties with no footways	Medium



Reference	Highway link	Review of link sensitivity	Sensitivity
18	B1035 Thorpe Road	Few receptors along the route	Low
19	B1035 (south of A120)	No receptors between A120 and construction access	Negligible
20	B1035 Clacton Road	Several properties, set back from the carriageway	Low
21	Bentley Road	Two properties, set back from the carriageway	Low
22	B1032 Frinton Road	Shopping area with roadside frontage, part of a promoted cycle route	High
30	B1034 Sneating Hall Lane	No receptors	Negligible
37	Waterhouse Lane	Single track road, dwellings close to the carriageway	High
38	B1029 Frating Road	Passes through the settlement of Little Bromley	Medium



HIGHWAY LINKS (LANE OR ROAD CLOSURE)

8.6.32 Using the review of the highway network in Volume 5, Annex 8.1, the sensitivity of each highway link to a temporary lane closure (the worst case scenario for these links), based on the criteria in Table 8.4 and professional judgement is summarised in Table 8.13.

Table 8.13: Highway link sensitivity (temporary lane closure)

Reference	Highway link	Review of link sensitivity	Sensitivity
26	Little Clacton Road	Regularly used, no convenient alternative route, unlikely to be a main route for ambulances from core residential areas to Colchester Hospital	Medium
11	B1032 Clacton Road	Regularly used, no convenient alternative route (over double the journey time), key link for tourist traffic in the summer months, likely to be a main route for emergency services	High
15	B1033 Thorpe Road	Regularly used, alternative route double journey time, key link for tourist traffic in the summer months, likely to be a main route for emergency services	High
30	B1034 Sneating Hall Lane	Less regularly used than other routes, convenient alternatives available	Low
25	B1414 Landermere Road	Less regularly used than other routes, convenient alternatives available	Low
28	B1035 Thorpe Road	Regularly used, no convenient alternative route	Medium



8.6.33 Using the review of the highway network in Volume 5, Annex 8.1, the sensitivity of each highway link to a temporary road closure (the worst case scenario for these links), based on the criteria in Table 8.4 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
29	Golden Lane	Less regularly used than other routes, convenient alternatives available, part of a promoted cycle route	Medium
31	Damant's Farm Lane	Very low use, convenient alternative available	Negligible
32	Whitehall Lane		
n/a	Lodge Lane	Very low use, would affect the business only which has an alternative route to Wolves Hall Lane	Negligible
34	Stones Green Road	Very low use, convenient alternative routes available, National Cycle Route 51 and part of a promoted cycle route	Medium
35	Wolves Hall Lane	Very low use, convenient alternative routes available	Low
39	Payne's Lane		
40	Spratt's Lane		
41	Barlon Road		
44	Ardleigh Road		
45	Grange Road		

PUBLIC RIGHTS OF WAY (PROW)

8.6.34 Using the review of the PRow in Volume 5, Annex 8.1, Table 8.15 identifies the sensitivity of each PRow, based on the criteria in Table 8.4 and professional judgement.



Table 8.15: PRow sensitivity

PRow	ECC Route Section	Review of link sensitivity	Sensitivity
167_29	1	Part of England Coast path, well used	Very High
164_5	1	Connects Holland Haven to nature reserve	High
164_6	1	Recreational routes close to communities	Medium
164_11	1		
164_10	1		
164_7	1		
164_138	1		
180_13	3		
180_7	3		
180_5	3		
180_4	3		
180_3	3		
180_1	3		
159_18	3		
180_18	3		
179_22	4		
179_8	4		
179_3	4		
179_1	4		
183_31	4		
183_32	4		
183_15	4	Further from communities, likely to be used for leisure walks in summer months.	Medium
172_20	5		
172_21	5		
172_17	5		
172_16	5		
166_3	5		
172_15	5		
170_57	5		



EVOLUTION OF THE BASELINE

BACKGROUND TRAFFIC GROWTH

8.6.35 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 8.9 and Table 8-10) 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 8.8 and Figure 8.9.

8.6.36 The TEMPRO factor (2022 to 2027)

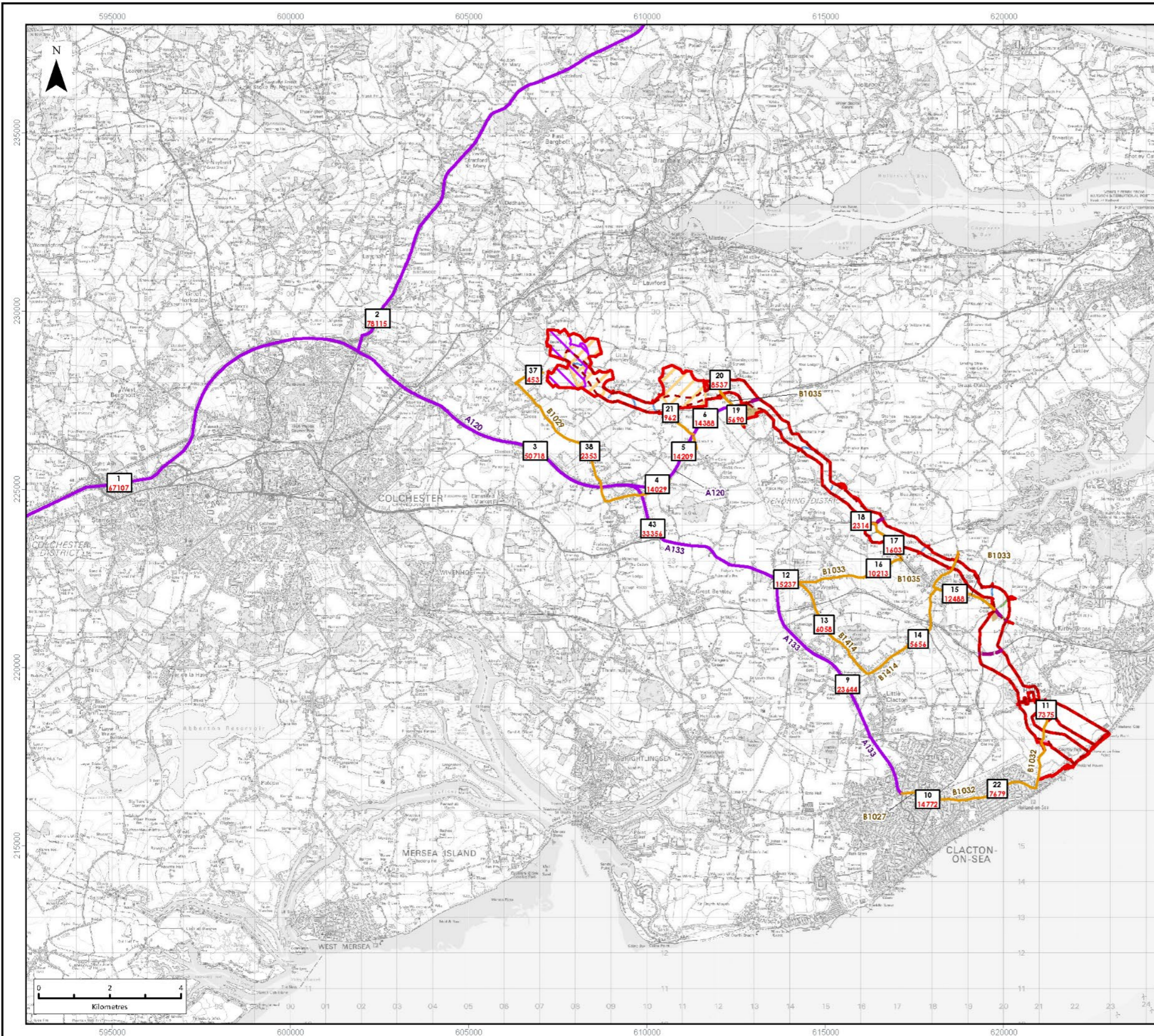
- > SRN – 1.0568; and
- > LRN – 1.0587.

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

Link ID	Location	AADT (2027)		HGV (%)
		Total vehicles	HGVs	
1	A12 north of A120	67,107	6,360	9.5
2	A12 south of A120	78,115	6,680	8.6
3	A120 between A12 and A133	50,718	3,076	6.1
4	A120 between the A133 and Harwich Road	14,029	1,480	10.6
5	A120 between Harwich Road and Bentley Road	14,209	1,651	11.6
6	A120 between Bentley Road and B1035	14,388	1,822	12.7
8	A133 between B1033 and B1027	23,644	846	3.6
10	B1027 St John's Road/ Valley Road	14,772	207	1.4
11	B1032 Clacton Road	7,375	116	1.6
12	B1033 Colchester Road (west of B1441)	15,237	283	1.9
13	B1441 Clacton Road	6,058	140	2.3
14	B1414 Harwich Road	5,656	110	1.9
15	B1033 Frinton Road	12,488	206	1.7
16	B1033 Colchester Road (east of B1441)	10,213	225	2.2
17	B1035 Tendring Road	1,603	40	2.5
18	B1035 Thorpe Road	2,314	48	2.1
19	B1035 (south of A120)			



Link ID	Location	AADT (2027) Total vehicles	HGVs	HGV (%)
20	B1035 Clacton Road	8,537	189	2.2
21	Bentley Road	962	27	2.9
22	B1027 Frinton Road	7,679	134	1.7
37	Waterhouse Lane	453	13	2.9
38	B1029 Frating Road	2353	63	2.7
43	A133 between A120 and B1033	33,356	1,336	4.0



LEGEND

- Onshore PIER Red Line Boundary
- Onshore Export Cable Corridor
- Onshore Cable Route Section Division
- National Grid Area of Search
- Onshore Substation Areas of Search
- Temporary Construction Compounds
- Works Access Required
- Haul Road Crossings
- Haul Road Access
- Core Access Route
- Local Access Route to Temporary Construction Compound
- XX Link Flow Count Location
- XX 2-way Traffic Flow

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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

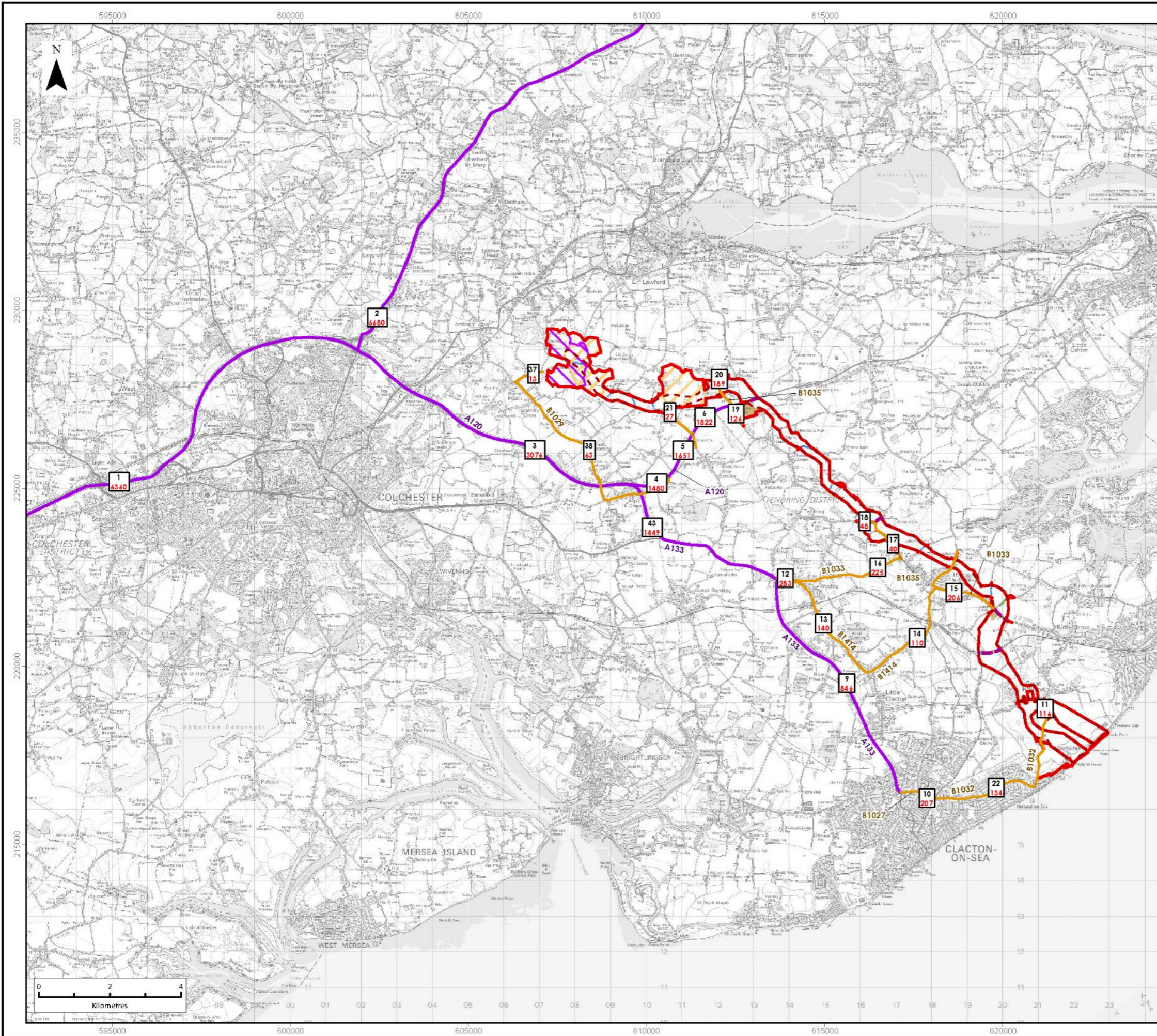
DRAWING TITLE:
2027 AADT (Total)

VER	DATE	REMARKS	Drawn	Checked
1	20/02/2023	PEIR Submission	DB	JS

DRAWING NUMBER:
FIGURE 8.8

SCALE: 1:110,000 PLOT SIZE: A3 DATUM: OSGB 1936 COORDINATE SYSTEM: British National Grid.





LEGEND

- Onshore PIER Red Line Boundary
- Onshore Export Cable Corridor
- Onshore Cable Route Section Division
- National Grid Area of Search
- Onshore Substation Areas of Search
- Temporary Construction Compounds
- Works Access Required
- Haul Road Crossings
- Haul Road Access
- Core Access Route
- Local Access Route to Temporary Construction Compound
- XX Link Flow Count Location
- XX 2-way Traffic Flow

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PROJECT TITLE:
 FIVE ESTUARIES OFFSHORE WINDFARM

DRAWING TITLE:
 2027 AADT (HGVs)

VER	DATE	REMARKS	Drawn	Checked
1	20/02/2023	PEIR Submission	DB	JS

DRAWING NUMBER:
 FIGURE 8.9

SCALE: 1:110,000 PLOT SIZE: A3 DATUM: OSGB 1936 COORDINATE SYSTEM: British National Grid





COMMITTED DEVELOPMENTS

8.6.37 In addition to background traffic growth, a review of consented development proposals within Tendring, East Suffolk and Essex has been undertaken to identify any schemes that would have an impact on permanent baseline traffic flows on the highway links within the study area.

8.6.38 These have been identified as:

- > 21/02070/FUL;
- > 20/00179/FUL; and
- > 20/01130/FUL.

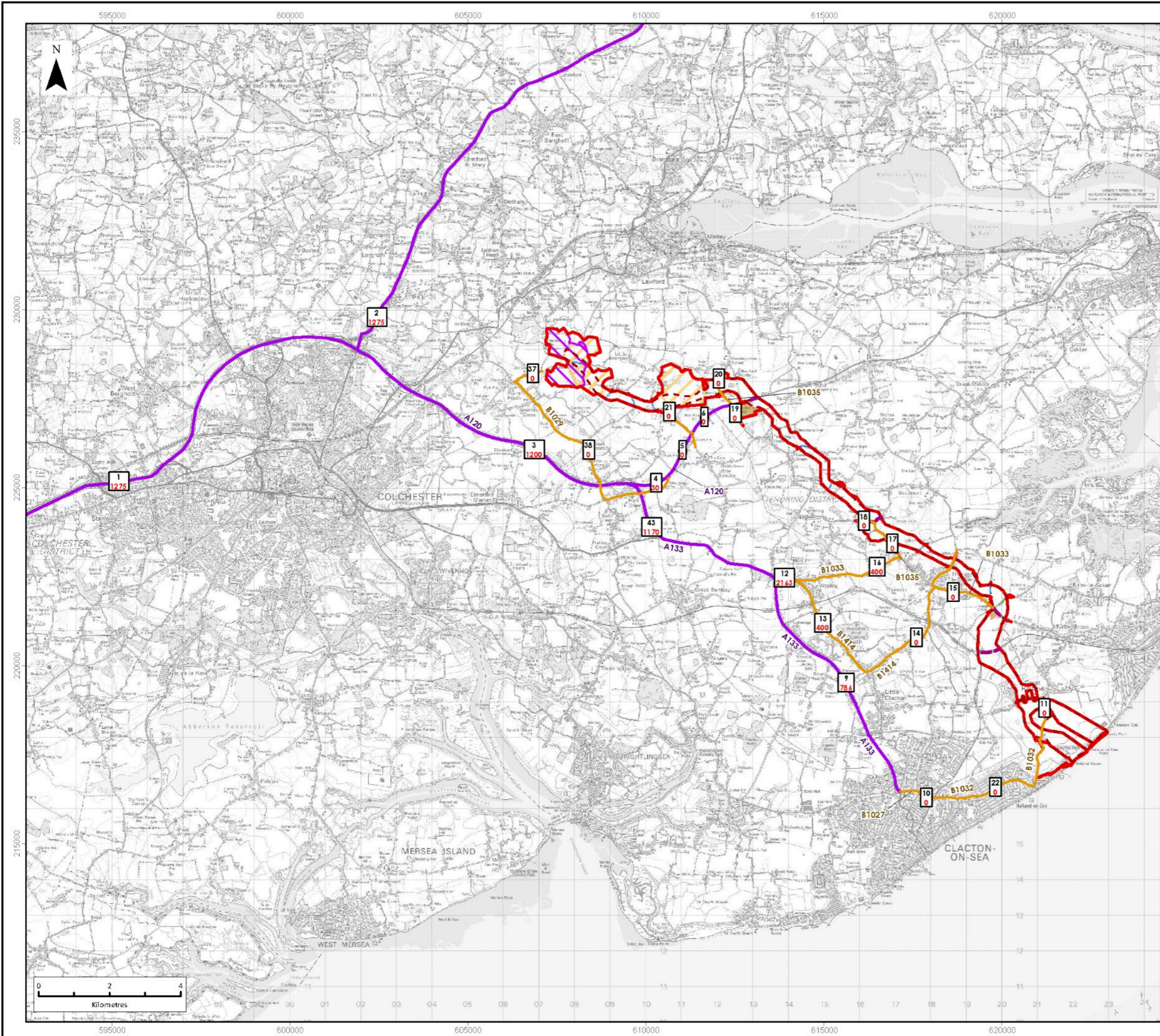
8.6.39 The forecast traffic flows associated with the above consented schemes have been derived using the morning and evening peak hour vehicle movements set out in the Transport Assessment prepared for each of the planning applications and factored for 24-hour flows, using factors derived from the TRICS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

- > Residential use – 4.85; and
- > Office use - 3.75.

8.6.40 Additionally, vehicle movements associated with the construction of Sizewell C have been added to the A12.

8.6.41 The committed development traffic flows (24-hour AADT are shown in Figure 8-10 and Figure 8-11.

The committed development flows have been added to the 2027 baseline AADT flows and are shown in Table 8.17 and Figure 8.12 and Figure 8.13.



LEGEND

- Onshore PIER Red Line Boundary
- Onshore Export Cable Corridor
- Onshore Cable Route Section Division
- National Grid Area of Search
- Onshore Substation Areas of Search
- Temporary Construction Compounds
- Works Access Required
- Haul Road Crossings
- Haul Road Access
- Core Access Route
- Local Access Route to Temporary Construction Compound
- XX Link Flow Count Location
- XX 2-way Traffic Flow

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PROJECT TITLE:
 FIVE ESTUARIES OFFSHORE WINDFARM

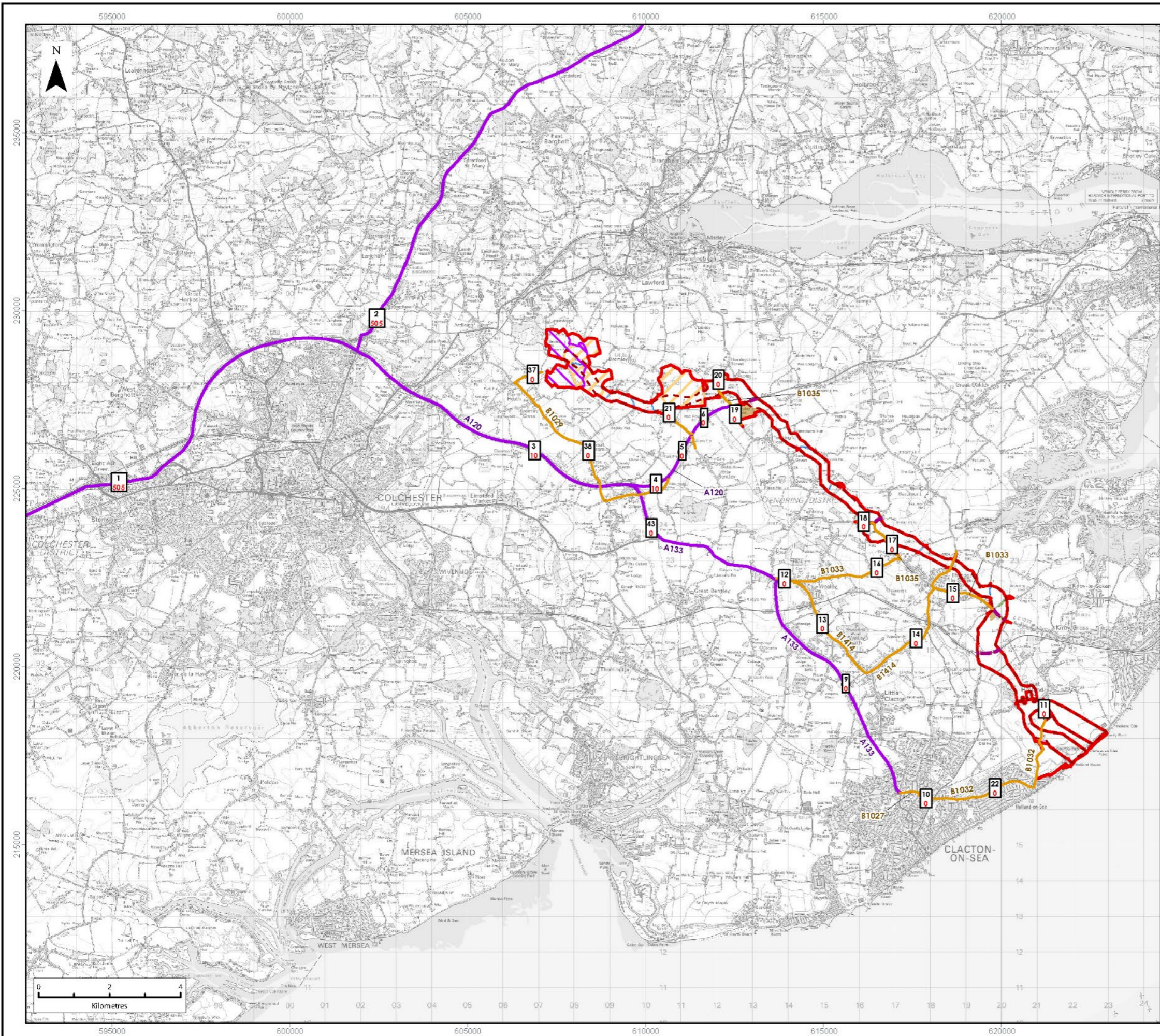
DRAWING TITLE:
 AADT Committed Development Flows (Total)

VER	DATE	REMARKS	Drawn	Checked
1	20/02/2023	PEIR Submission	DB	JS

DRAWING NUMBER:
 FIGURE 8.10

SCALE: 1:110,000 PLOT SIZE: A3 DATUM: OSGB 1936 COORDINATE SYSTEM: British National Grid





LEGEND

- Onshore PIER Red Line Boundary
- Onshore Export Cable Corridor
- Onshore Cable Route Section Division
- National Grid Area of Search
- Onshore Substation Areas of Search
- Temporary Construction Compounds
- Works Access Required
- Haul Road Crossings
- Haul Road Access
- Core Access Route
- Local Access Route to Temporary Construction Compound
- XX Link Flow Count Location
- XX 2-way Traffic Flow

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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

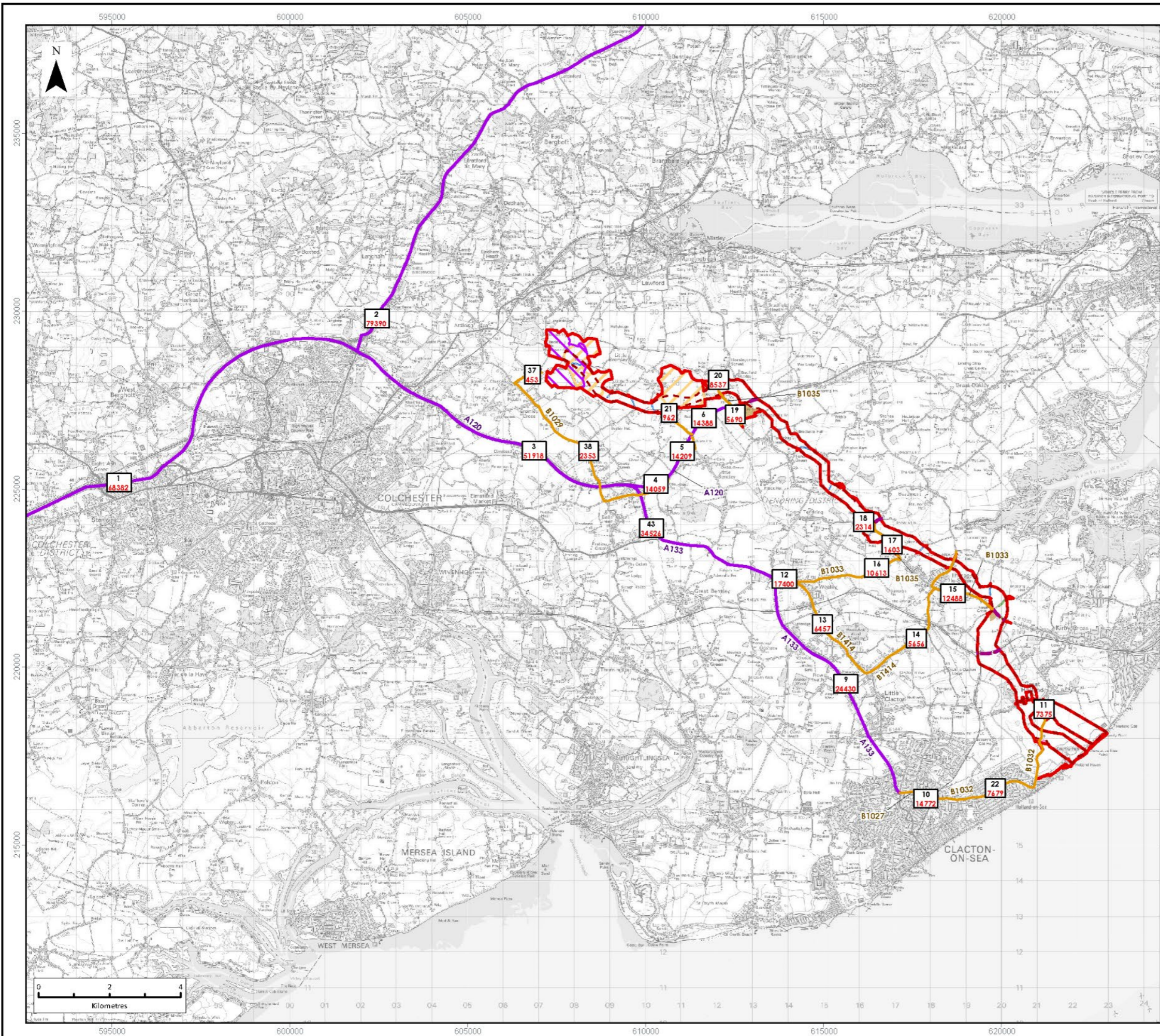
DRAWING TITLE:
AADT Committed Development Flows (HGVs)

VER	DATE	REMARKS	Drawn	Checked
1	20/02/2023	PEIR Submission	DB	JS

DRAWING NUMBER:
FIGURE 8.11

SCALE: 1:110,000 PLOT SIZE: A3 DATUM: OSGB 1936 CO-ORDINATE SYSTEM: British National Grid





LEGEND

- Onshore PIER Red Line Boundary
- Onshore Export Cable Corridor
- Onshore Cable Route Section Division
- National Grid Area of Search
- Onshore Substation Areas of Search
- Temporary Construction Compounds
- Works Access Required
- Haul Road Crossings
- Haul Road Access
- Core Access Route
- Local Access Route to Temporary Construction Compound
- XX Link Flow Count Location
- XX 2-way Traffic Flow

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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

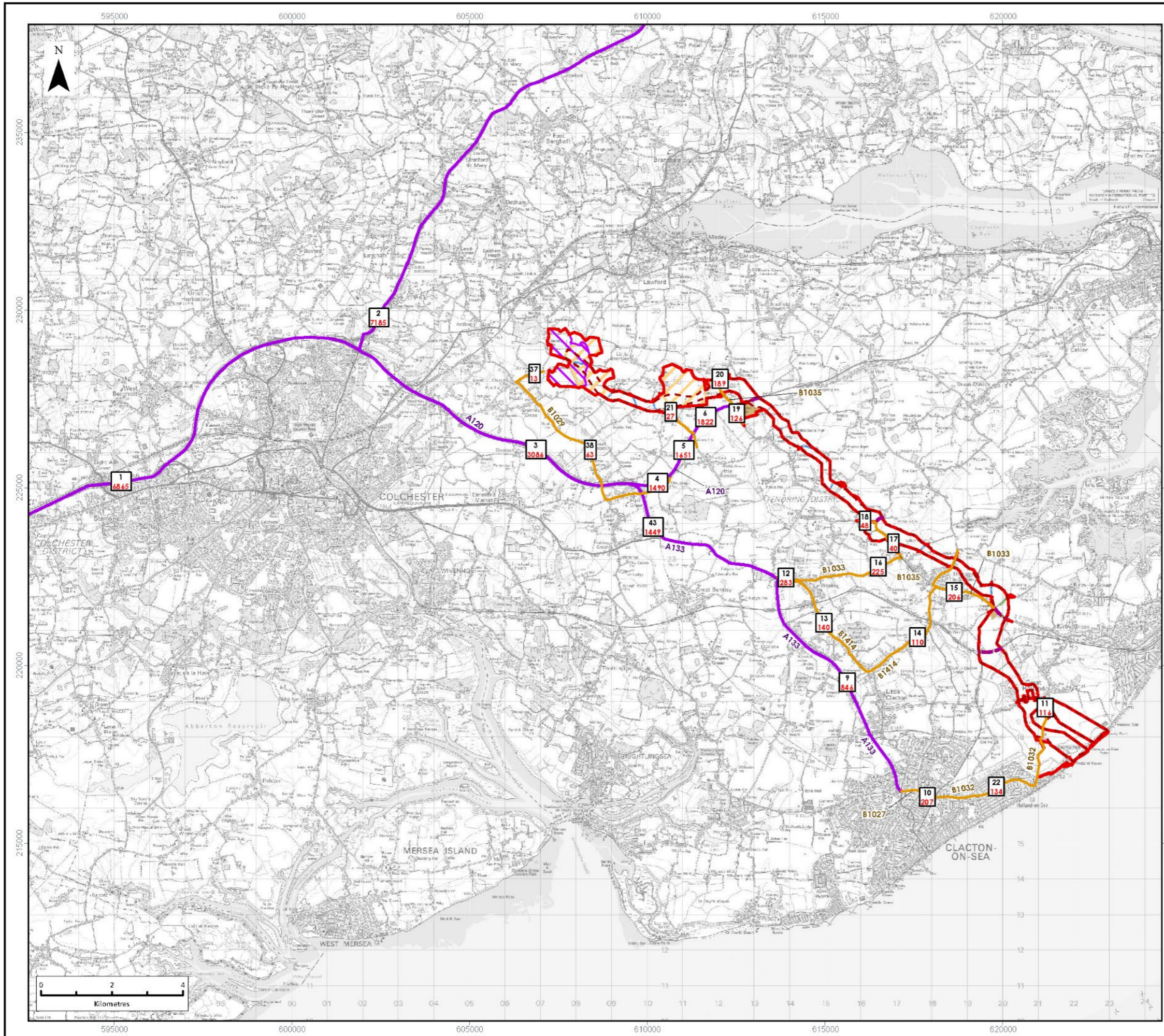
DRAWING TITLE:
2027 AADT & Committed Development Flows (Total)

VER	DATE	REMARKS	Drawn	Checked
1	20/02/2023	PEIR Submission	DB	JS

DRAWING NUMBER:
FIGURE 8.12

SCALE: 1:110,000 PLOT SIZE: A3 DATUM: OSGB 1936 COORDINATE SYSTEM: British National Grid





LEGEND

- Onshore PIER Red Line Boundary
- Onshore Export Cable Corridor
- Onshore Cable Route Section Division
- National Grid Area of Search
- Onshore Substation Areas of Search
- Temporary Construction Compounds
- Works Access Required
- Haul Road Crossings
- Haul Road Access
- Core Access Route
- Local Access Route to Temporary Construction Compound
- XX Link Flow Count Location
- XX 2-way Traffic Flow

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PROJECT TITLE:
 FIVE ESTUARIES OFFSHORE WINDFARM

DRAWING TITLE:
 2027 AADT & Committed Development Flows (HGVs)

VER	DATE	REMARKS	Drawn	Checked
1	20/02/2023	PEIR Submission	DB	JS

DRAWING NUMBER:
 FIGURE 8.13

SCALE: 1:110,000 PLOT SIZE: A3 DATUM: OSGB 1936 CO-ORDINATE SYSTEM: British National Grid





Table 8.17: Highway link (construction access routes) AADT (2027, with committed developments)

Link ID	Location	AADT (2027 with committed developments)		HGV (%)
		Total vehicles	HGVs	
1	A12 north of A120	68,440	6,870	10.0
2	A12 south of A120	79,457	7,013	8.8
3	A120 between A12 and A133	52,052	3,094	5.9
4	A120 between the A133 and Harwich Road	14,097	1,620	11.5
5	A120 between Harwich Road and Bentley Road	14,246	1,719	12.1
6	A120 between Bentley Road and B1035	14,426	1,827	12.7
8	A133 between B1033 and B1027	26,834	895	3.3
10	B1027 St John's Road/ Valley Road	15,639	219	1.4
11	B1032 Clacton Road	7,807	123	1.6
12	B1033 Colchester Road (west of B1441)	18,294	300	1.6
13	B1441 Clacton Road	6,813	148	2.2
14	B1414 Harwich Road	5,988	116	1.9
15	B1033 Frinton Road	13,220	218	1.7
16	B1033 Colchester Road (east of B1441)	11,213	238	2.1
17	B1035 Tendring Road	1,697	42	2.5
18	B1035 Thorpe Road	2,450	51	2.1
19	B1035 (south of A120)	6,024	134	2.2
20	B1035 Clacton Road	9,037	200	2.2
21	Bentley Road	1,019	29	2.8
22	B1027 Frinton Road	8,130	141	1.7
37	Waterhouse Lane	480	14	2.9
38	B1029 Frating Road	2,491	67	2.7
43	A133 between A120 and B1033	37,956	1,473	3.9



8.7 KEY PARAMETERS FOR ASSESSMENT

8.7.1 The trip generation and distribution parameters are described in detail in Volume 5, Annex 8.2 and the associated appendices and summarised in Paragraph 8.7.2 below.

TRIP GENERATION PARAMETERS

8.7.2 The key trip generation parameters are:

- > Core working hours – 07:00 to 19:00 (some activities, such as HDD 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 18:15 (April to October), or before 16:15 (November to March), based on approximate daylight hours; and
 - > 20% arriving between 07:00 and 09:00 and leaving between 16:15 and 18:15 (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 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

8.7.3 In terms of the traffic distribution parameters, all vehicle movements associated with the construction phase of VE are assumed to arrive from and depart to the A12) at Junction 29 (with the exception of Abnormal Indivisible Loads (AILs), which are assumed might arrive from the Port of Harwich via the A120 east, to ensure a robust assessment along these highway links and junctions.

8.7.4 For the purposes of the assessment, HGVs and construction employee vehicles will use the same routes to ensure a robust assessment along these highway links and junctions. Also, 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 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

8.7.5 Three assessment scenarios have been considered to take account of the maximum likely impact on all highway links in the study area, for the OnSS options as described in Volume 5, Annex 8.2.

8.7.6 The assessment scenarios are:

- > Scenario 1: SSA East/ ECC Route Section 5 via B1035 Clacton Road;
- > Scenario 2: SSA East or SSA West/ ECC Route Section 5 via Bentley Road; and
- > Scenario 3: SSA West via Waterhouse Lane and the B1209.

8.7.7 The distribution for Scenarios 1 to 3 are set out in Table 8.18.

Table 8.18: VE construction traffic distribution

TCC	ECC Route Section	Distribution (%)		
		Scenario 1	Scenario 2	Scenario 3
1, 2 and 3	1	100	100	100
4	2	100	100	100
5	3	50	50	50
6	3	50	50	50
7	4	50	50	50
8	4	50	50	50
9a, b and c	5	100	0	0
	SSA East	100	0	0
10a, b and c	5	100	100	100
	SSA East	0	100	0
	SSA West	100	100	0
11	SSA West	0	0	100

MAXIMUM DESIGN SCENARIO

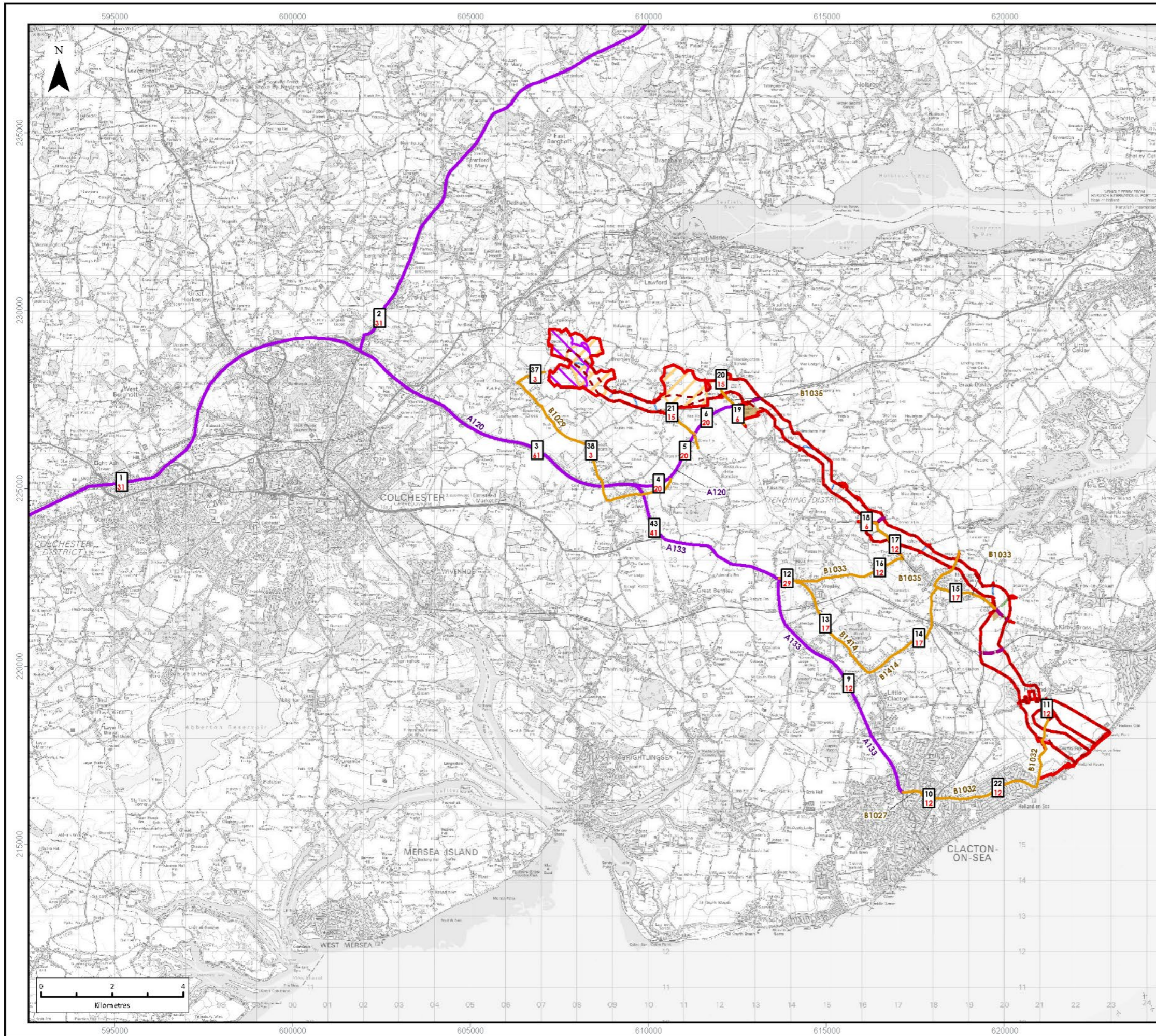
8.7.8 The MDS is summarised in Table 8.19.

Table 8.19: Maximum design scenario.

Potential effect	Maximum adverse scenario assessed	Justification
Construction		
All effects considered as set out in Paragraphs 8.4.1 to 8.4.26	The maximum number of total vehicles/ HGVs expected at each construction access location and highway link, as set out in	The maximum forecast vehicle movements at each construction access will not occur simultaneously.



Potential effect	Maximum adverse scenario assessed	Justification
	<p>Table 8.21 and Figure 8.14 to Figure 8.16 (Peak hour)</p> <p>Table 8.23 and Figure 8.17 to Figure 8.19 (Daily AADT)</p> <p>Where open trenching technology is an option for the export cable to be installed under a road it is assumed that there would be a temporary lane or road closure (the worst case for each).</p>	<p>The 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.</p> <p>The assessment uses a conservative estimate of car sharing and does not take into account the implementation of measures within the Outline WTP (Volume 5, Annex 8.5)</p> <p>The assessment includes a sensitivity test of a proportion of workforce vehicle movements (20%) in the morning and evening highway peak hours.</p>
Decommissioning		
All effects considered	Assumed to be no worse than the construction phase	



LEGEND

- ▭ Onshore PIER Red Line Boundary
- - - Onshore Export Cable Corridor
- Onshore Cable Route Section Division
- ▭ National Grid Area of Search
- ▭ Onshore Substation Areas of Search
- ▭ Temporary Construction Compounds
- ▭ Works Access Required
- ▭ Haul Road Crossings
- ▭ Haul Road Access
- Core Access Route
- Local Access Route to Temporary Construction Compound
- XX Link Flow Count Location
- XX 2-way Traffic Flow

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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

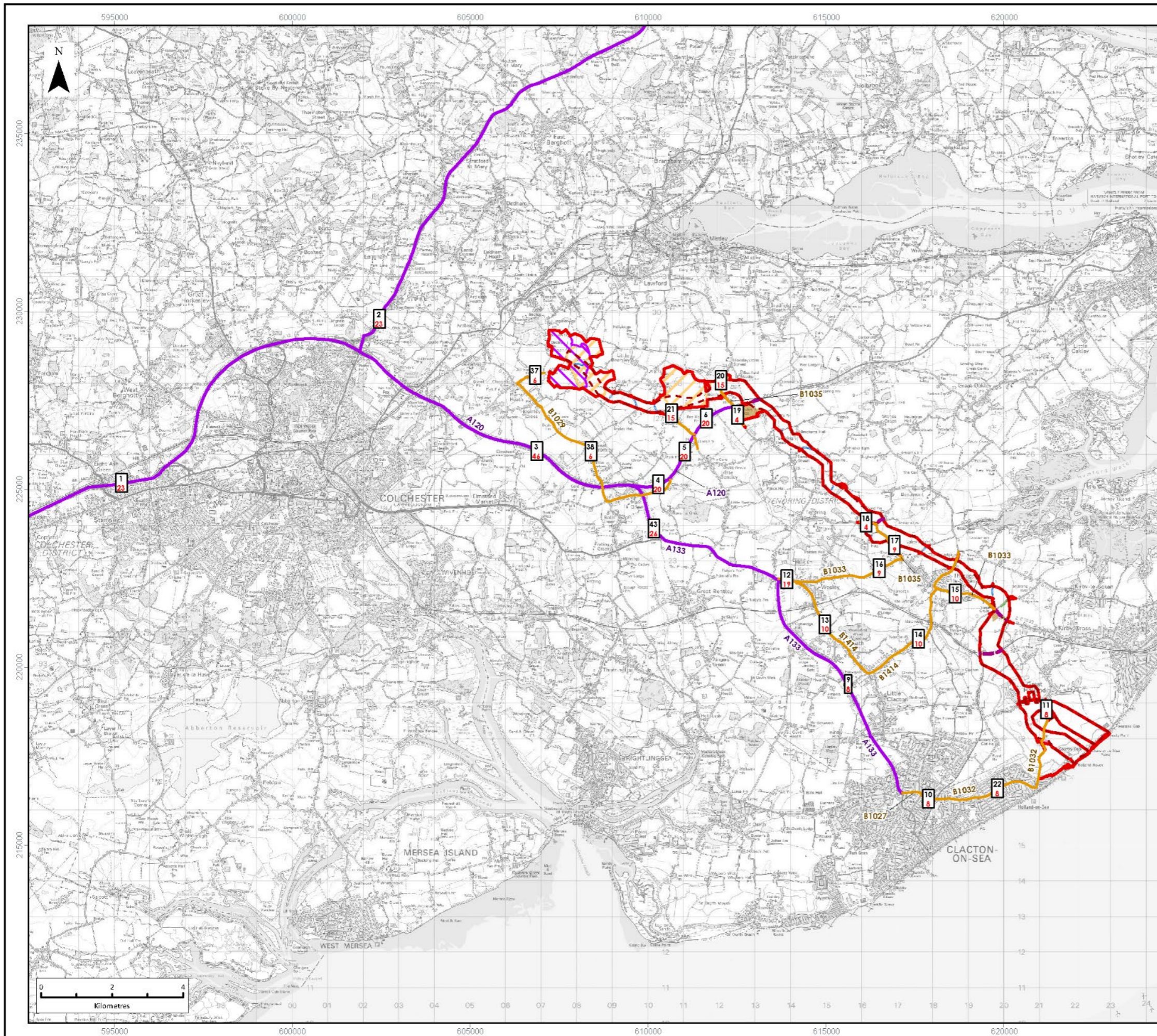
DRAWING TITLE:
Peak Hour VE Construction Traffic (Personnel)

VER	DATE	REMARKS	Drawn	Checked
1	20/02/2023	PEIR Submission	DB	JS

DRAWING NUMBER:
FIGURE 8.14

SCALE: 1:110,000 PLOT SIZE: A3 DATUM: OSGB 1936 COORDINATE SYSTEM: British National Grid





LEGEND

- Onshore PIER Red Line Boundary
- Onshore Export Cable Corridor
- Onshore Cable Route Section Division
- National Grid Area of Search
- Onshore Substation Areas of Search
- Temporary Construction Compounds
- Works Access Required
- Haul Road Crossings
- Haul Road Access
- Core Access Route
- Local Access Route to Temporary Construction Compound
- Link Flow Count Location
- 2-way Traffic Flow

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FIVE ESTUARIES OFFSHORE WINDFARM

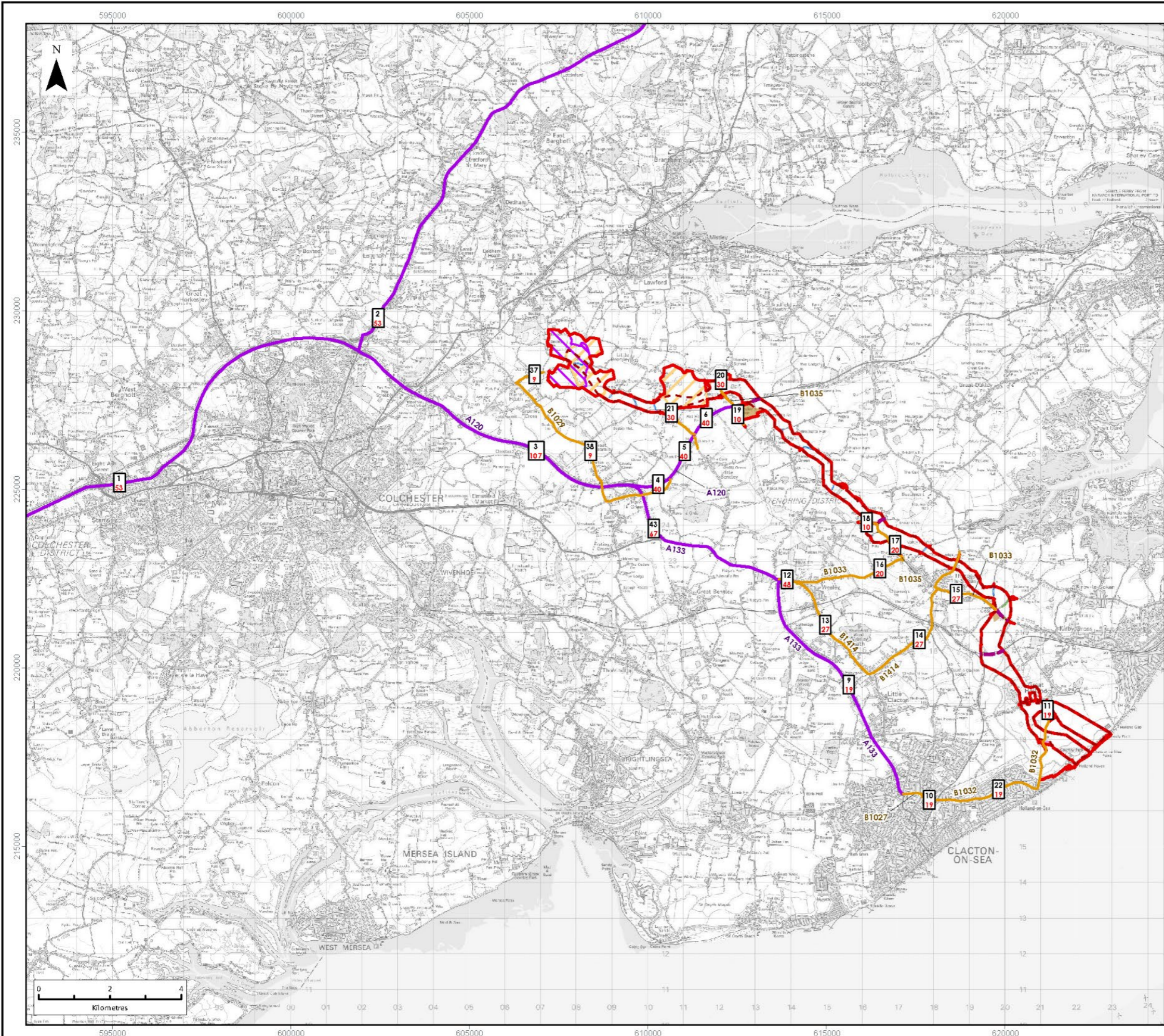
DRAWING TITLE:
Peak Hour VE Construction Traffic (HGVs)

VER	DATE	REMARKS	Drawn	Checked
1	20/02/2023	PEIR Submission	DB	JS

DRAWING NUMBER:
FIGURE 8.15

SCALE: 1:110,000 PLOT SIZE: A3 DATUM: OSGB 1936 COORDINATE SYSTEM: British National Grid





LEGEND

- Onshore PIER Red Line Boundary
- Onshore Export Cable Corridor
- Onshore Cable Route Section Division
- National Grid Area of Search
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- Haul Road Access
- Core Access Route
- Local Access Route to Temporary Construction Compound
- XX Link Flow Count Location
- XX 2-way Traffic Flow

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FIVE ESTUARIES OFFSHORE WINDFARM

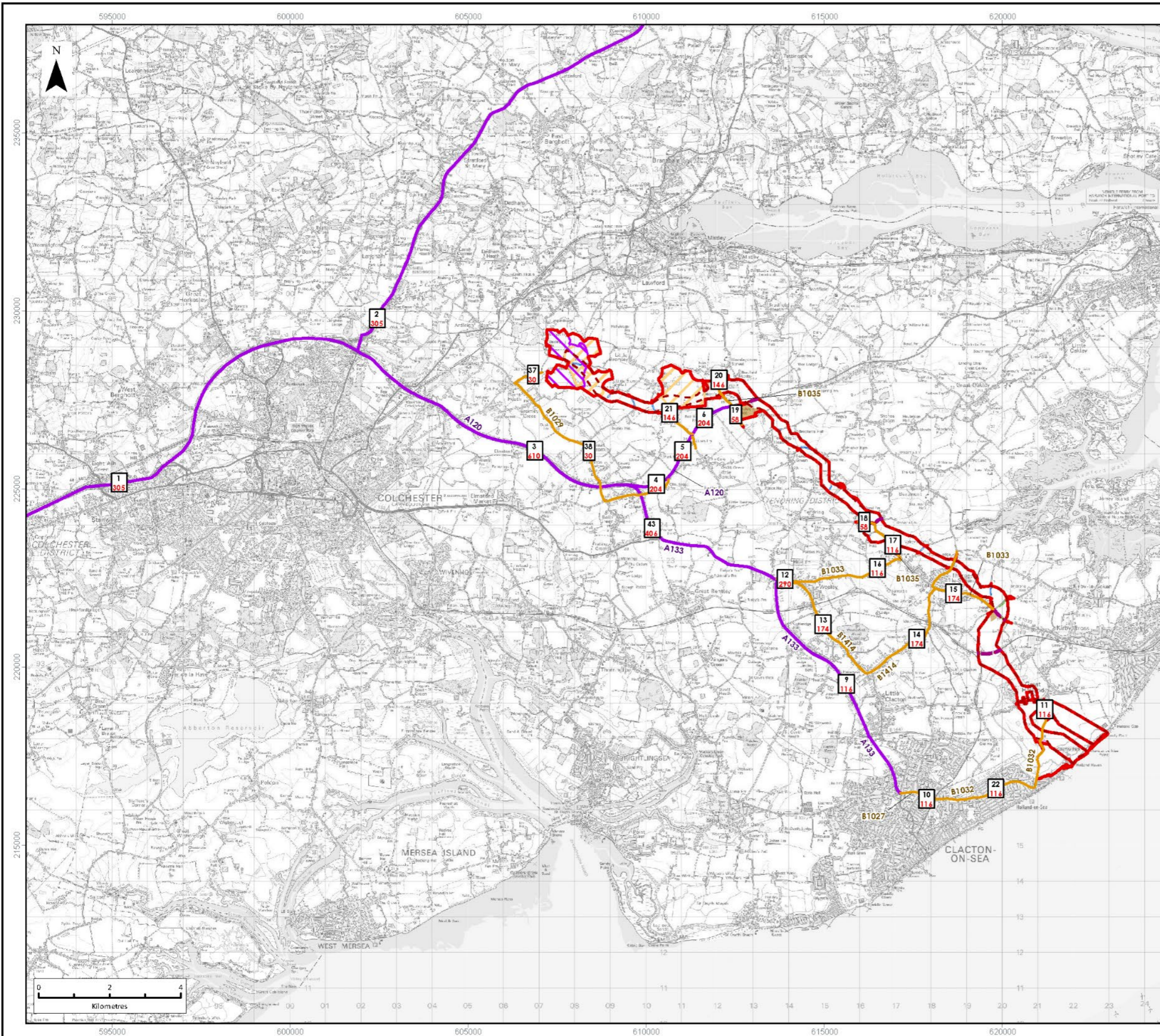
DRAWING TITLE:
Peak Hour VE Construction Traffic (Total)

VER	DATE	REMARKS	Drawn	Checked
1	20/02/2023	PEIR Submission	DB	JS

DRAWING NUMBER:
FIGURE 8.16

SCALE: 1:110,000 PLOT SIZE: A3 DATUM: OSGB 1936 COORDINATE SYSTEM: British National Grid





LEGEND

- Onshore PIER Red Line Boundary
- Onshore Export Cable Corridor
- Onshore Cable Route Section Division
- National Grid Area of Search
- Onshore Substation Areas of Search
- Temporary Construction Compounds
- Works Access Required
- Haul Road Crossings
- Haul Road Access
- Core Access Route
- Local Access Route to Temporary Construction Compound
- XX Link Flow Count Location
- XX 2-way Traffic Flow

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PROJECT TITLE:
 FIVE ESTUARIES OFFSHORE WIND FARM

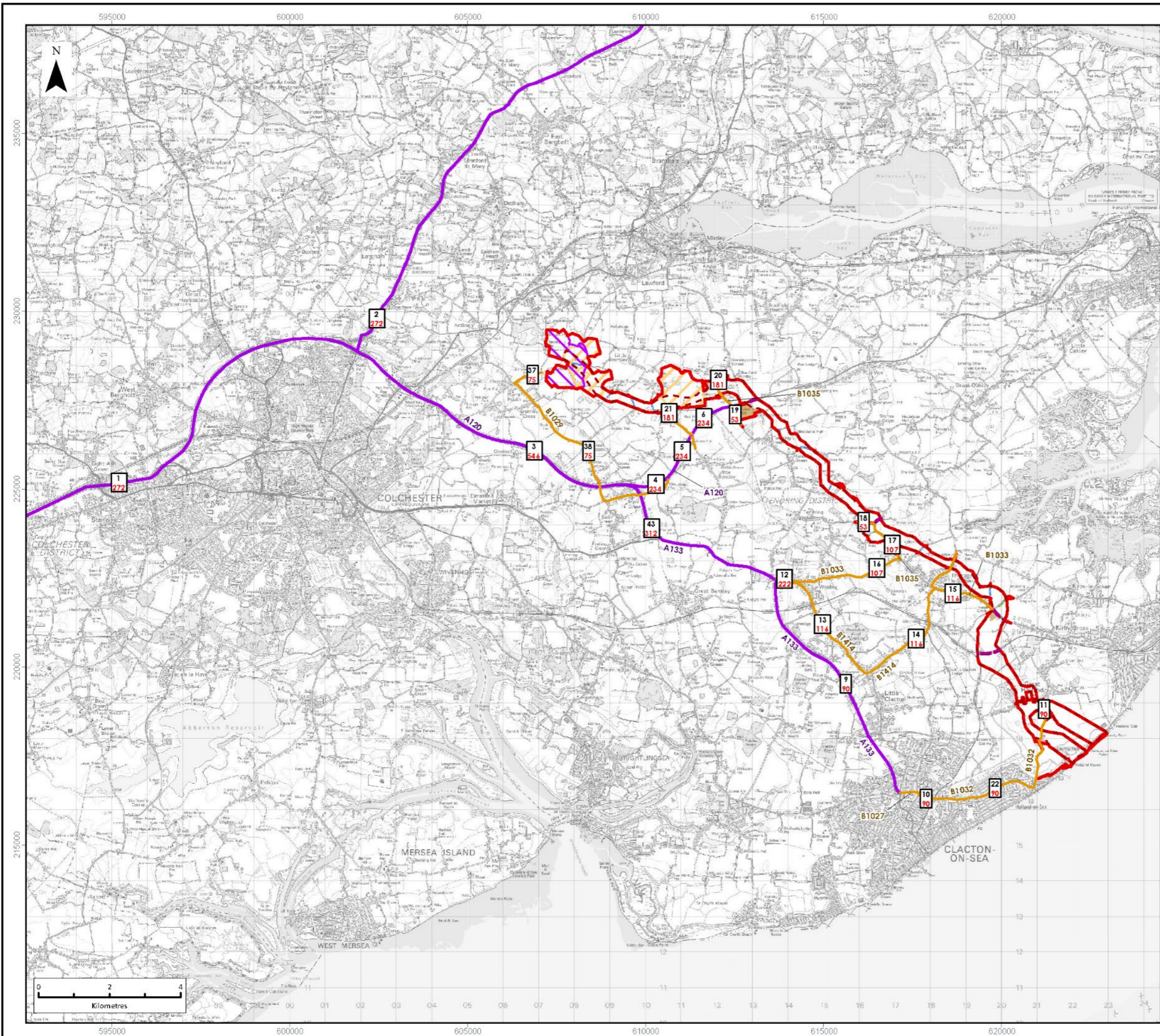
DRAWING TITLE:
 Maximum AADT VE
 Construction Traffic (Personnel)

VER	DATE	REMARKS	Drawn	Checked
1	20/02/2023	PIER Submission	DB	JS

DRAWING NUMBER:
 FIGURE 8.17

SCALE: 1:110,000 PLOT SIZE: A3 DATUM: OSGB 1936 COORDINATE SYSTEM: British National Grid





LEGEND

- Onshore PIER Red Line Boundary
- Onshore Export Cable Corridor
- Onshore Cable Route Section Division
- National Grid Area of Search
- Onshore Substation Areas of Search
- Temporary Construction Compounds
- Works Access Required
- Haul Road Crossings
- Haul Road Access
- Core Access Route
- Local Access Route to Temporary Construction Compound
- XX Link Flow Count Location
- XX 2-way Traffic Flow

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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

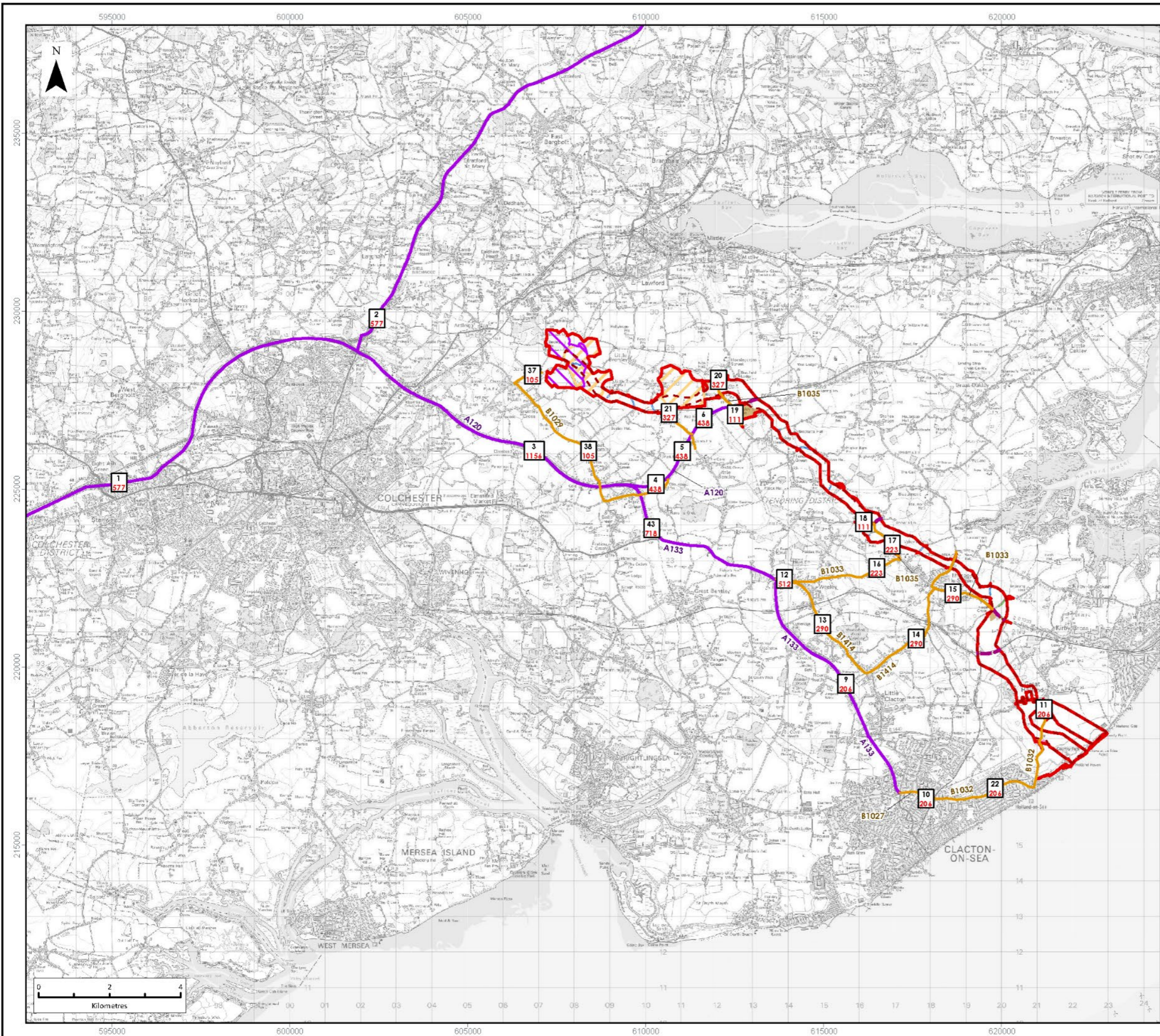
DRAWING TITLE:
**Maximum AADT VE
 Construction Traffic (HGVs)**

VER	DATE	REMARKS	Drawn	Checked
1	20/02/2023	PEIR Submission	DB	JS

DRAWING NUMBER:
FIGURE 8.18

SCALE: 1:110,000 PLOT SIZE: A3 DATUM: OSGB 1936 CO-ORDINATE SYSTEM: British National Grid.





LEGEND

- Onshore PIER Red Line Boundary
- Onshore Export Cable Corridor
- Onshore Cable Route Section Division
- National Grid Area of Search
- Onshore Substation Areas of Search
- Temporary Construction Compounds
- Works Access Required
- Haul Road Crossings
- Haul Road Access
- Core Access Route
- Local Access Route to Temporary Construction Compound
- XX Link Flow Count Location
- XX 2-way Traffic Flow

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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

DRAWING TITLE:
Maximum AADT VE Construction Traffic (Total)

VER	DATE	REMARKS	Drawn	Checked
1	20/02/2023	PEIR Submission	DB	JS

DRAWING NUMBER:
FIGURE B.19

SCALE: 1:110,000 PLOT SIZE: A3 DATUM: OSGB 1936 CO-ORDINATE SYSTEM: British National Grid





8.8 EMBEDDED MITIGATION

The embedded mitigation contained in Table 8.20 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 8.20: Mitigation relating to Traffic and Transport

Project phase	Mitigation measures embedded into the project design
Construction	
Outline Construction Traffic Management Plan (Outline CTMP)	An Outline CTMP has been prepared (Volume 5, Annex 8.3) which sets out the key principles and types of measures to be implemented during construction of VE.
Outline Workforce Travel Plan (Outline WTP)	An Outline WTP is provided (Volume 5, Annex 8.5) 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)	An Outline PAMP has been prepared (Volume 5, Annex 8.4), which 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.
No roads to be fully closed to install cables under the public highway (Other than roads where the width of the carriageway is unlikely to permit one lane to be kept open)	<p>HDD (or another trenchless technique) (or other trenchless crossing technique) will be utilised for the installation of the export cable under the A120 (and other roads where this is considered appropriate).</p> <p>Where feasible, for the roads where the open trenching method is to be adopted to remain open at all times and minimise disruption, it is proposed that:</p> <ul style="list-style-type: none"> > The road crossings would be completed in two stages maintaining one traffic lane in each direction; > Traffic would be controlled through temporary traffic signals; > A safe route would be maintained for pedestrians through the works areas; > advanced signing would be implemented to assist drivers in finding alternative routes; and > The works would be staggered so that multiple roads would not be closed at the same time, minimising the potential impact to users of the highway network.



Project phase	Mitigation measures embedded into the project design
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.
Decommissioning	
Best practice construction measures	Decommissioning works would be undertaken in accordance with best practice measures at the relevant time.

8.9 ENVIRONMENTAL ASSESSMENT: CONSTRUCTION PHASE

8.9.1 This section considers the construction phase impacts of VE on Traffic and Transport, through reference to the MDS presented in Table 8.19.

DRIVER SEVERANCE AND DELAY

PEAK HOUR TRAFFIC IMPACT

- 8.9.2 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.
- 8.9.3 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.
- 8.9.4 Volume 5, Annex 8.2 shows the maximum forecast vehicle movements (HGV and LGV) during the peak hours on the highway network for the three scenarios described in Paragraph 8.7.6 and the highway links with greater than the 30 two-way vehicle movements threshold (as set out in Paragraph 8.4.6) are shown in Table 8.21.



Table 8.21: Highway links with greater than 30 two-way peak hour vehicle movements

Link ID	Highway Link	Maximum two-way		
		HGV	LGV	Total
1	A12 north of A120	23	31	54
2	A12 south of A120	23	31	534
3	A120 between A12 and A133	45	61	106
4	A120 between the A133 and Harwich Road	19	20	39
5	A120 between Harwich Road and Bentley Road	19	20	39
6	A120 between Bentley Road and B1035	19	17	36
12	B1033 Colchester Road (west of B1441)	19	29	48
43	A133 between A120 and B133	26	41	67

8.9.5 Despite the highway links in Table 8.21 breaching the 30 two-way vehicle movement threshold, no further assessment has been undertaken for the following reasons:

- > The 54 vehicles on the A12 north would be distributed between the A12 off-slip/ A120 on-slip and the A120 off-slip/ A12 on slip with some vehicles using Ipswich Road for connections to and from Colchester and therefore likely to be less than 30 vehicles on each link;
- > The 54 vehicles on the A12 south would be distributed between the A12 free flow link to the A120 and the A120 free-flow link to the A12 with some vehicles using Ipswich Road for connections to and from Colchester and therefore likely to be less than 30 vehicles on each link;
- > The 106 vehicles on the A120 between the A12 and A133 result in 67 vehicle movements on the eastbound free-flow slip to the A133 and the westbound free-flow slip to the A120 (marginally over 30 vehicles on each) and no junction that requires assessing;
- > The 39 vehicles on the A120 at the Harwich Road junction is only marginally over the 30 threshold and given the roundabout has recently been constructed and the mean maximum peak hour queue length of 2 vehicles on the A120 as set out in Table 3.8 in Volume 5, Annex .8.1, the junction is likely to be operating well within its' theoretical capacity;
- > The 36 vehicles on the A120 at the B1035 junction is only marginally over the 30 threshold and given the mean maximum peak hour queue length of 10 on the A120 as set out in Table 3.9 in Volume 5, Annex.8.2, the junction is likely to be operating within its' theoretical capacity; and
- > The 48 vehicles on the B133 and the 67 vehicles on the A133 at the Weeley roundabout are well above the 30 vehicle threshold; however, from a review of a Transport



Assessment prepared for a committed development³ the peak hours at this roundabout are 08:00 to 09:00 and 16:30 to 17:30, which are likely to be avoided by construction workforce vehicles.

- 8.9.6 Taking the analysis set out above and using Table 8.3, 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 result in **a negligible or minor significance which is not significant** in terms of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017.

IMPACT OF OPEN TRENCHING ON HIGHWAY LINKS

- 8.9.7 The other aspect of driver severance and delay would be as a result of the installation of the export cable across roads using open trenching technology, as set out in Paragraph 8.4.34.
- 8.9.8 Where possible, the affected roads would be kept open with traffic management measures in place to ensure minimal disruption to existing vehicles on the highway network. In this scenario (known as shuttle working) there would be a slight delay as a result of temporary traffic lights or manually operated 'STOP/ GO' boards to keep one lane open; however, the works for crossing these roads will be for a short period, no longer than seven days. For some of the roads where the width of the carriageway is unlikely to permit one lane to be kept open, an assessment has been undertaken on the assumption that a temporary road closure would be required.
- 8.9.9 It is assumed that any temporary road closure would be for a maximum of seven days and should more than one temporary road closure be required during the construction of VE, these would not be simultaneous unless agreed with Essex County Council in advance or via approval of the Final CTMP.
- 8.9.10 Table 8.22 provides the assessment of driver severance and delay on the highway links as a result of a temporary road or lane closure (the worst-case scenario forecast for each link).
- 8.9.11 For the identified magnitude of impact for each link, the use of traffic management measures in the Outline CTMP (Volume 5, Annex 8.3) such as suitable signage warning users of the temporary road closures and diversions available, have been considered and will be developed as part of the final CTMP, which would need to be approved by Essex County Council. 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.

³ Mixed-use development, Land south of Thorpe road, Weeley, Ardent Consulting Engineers, 2017



Table 8.22: Assessment of severance and delay on the highway links as a result of a temporary lane or road closure

Link ID	Highway link	Impact (worst case)	Sensitivity	Magnitude of impact	Level of effect
26	Little Clacton Road	Temporary lane closure	Medium	Negligible	Minor adverse (not significant)
11	B1032 Clacton Road		High	Low	Moderate adverse (significant)
15	B1033 Thorpe Road		High	Low	Moderate adverse (significant)
30	B1034 Sneating Hall Lane		Low	Negligible	Negligible adverse (not significant)
25	B1414 Landermere Road		Low	Low	Minor adverse (not significant)
28	B1035 Thorpe Road		Medium	Low	Minor adverse (not significant)
29	Golden Lane		Medium	Low	Minor adverse (not significant)
31	Damant's Farm Lane	Temporary road closure	Negligible	Low	Negligible adverse (not significant)
32	Whitehall Lane		Negligible	Low	Negligible adverse (not significant)
n/a	Lodge Lane		Negligible	Low	Negligible adverse (not significant)
34	Stones Green Road		Medium	Low	Minor adverse (not significant)
35	Wolves Hall Lane		Low	Low	Minor adverse (not significant)
39	Payne's Lane		Low	Low	Minor adverse (not significant)
40	Spratt's Lane		Low	Low	Minor adverse (not significant)
41	Barlon Road		Low	Low	Minor adverse (not significant)
44	Ardleigh Road	Low	Low	Minor adverse (not significant)	



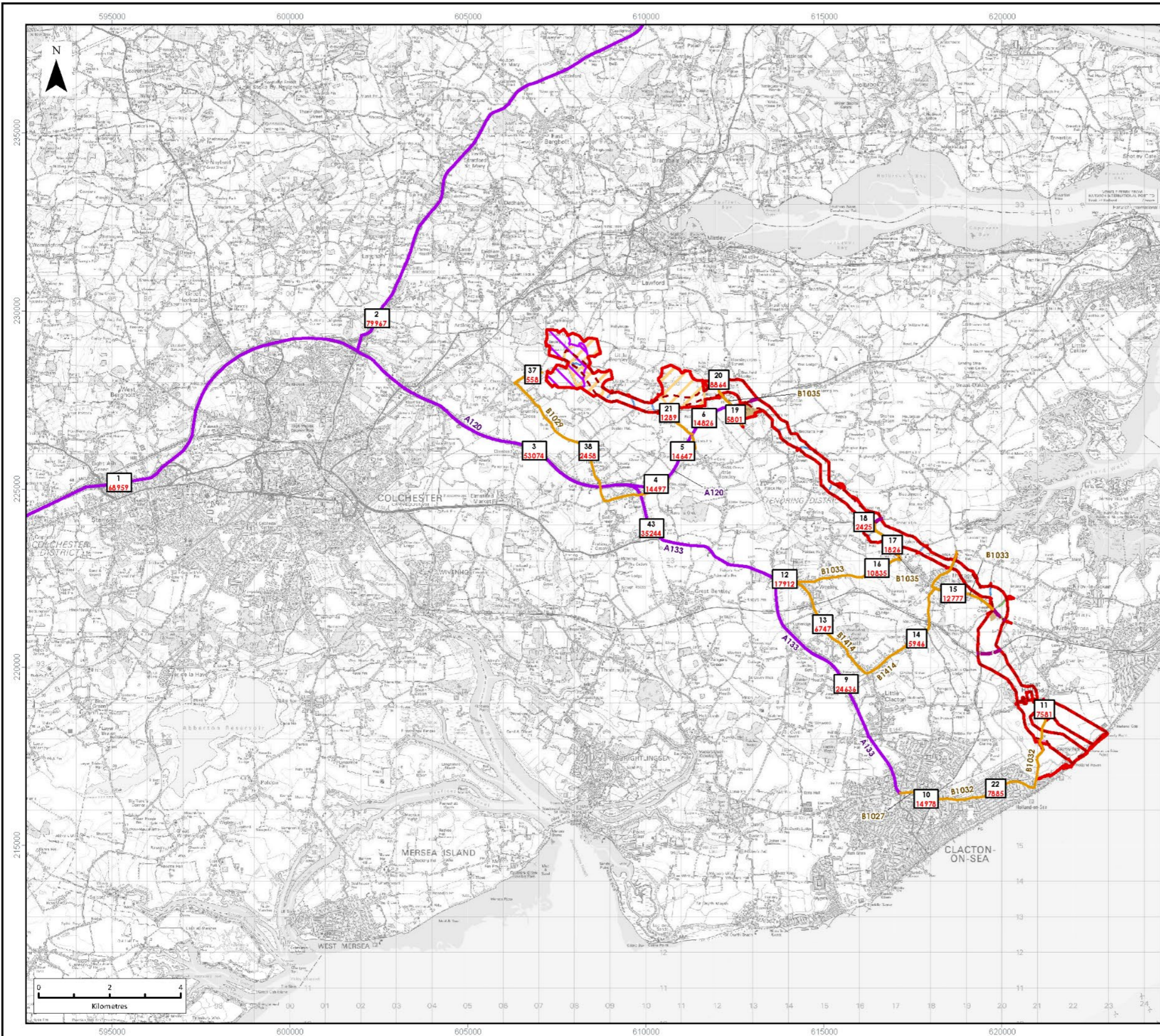
Link ID	Highway link	Impact (worst case)	Sensitivity	Magnitude of impact	Level of effect
45	Grange Road		Low	Low	Minor adverse (not significant)



- 8.9.12 Based on the analysis in Table 8.22 for all highway links, with the exception of the B1032 Clacton Road and B1033 Thorpe Road, the temporary adverse effects on driver severance and delay would **be negligible or minor in significance, which is not significant** in terms of the EIA Regulations.
- 8.9.13 The sensitivity of the B1032 Clacton Road and B1033 Thorpe Road has been classed as high for a temporary lane closure; however, VE would endeavour to programme these (if they are required) to be outside of the summer months when there are higher traffic movements on these links and also ensure early engagement is undertaken with the Ambulance and Fire services, so that alternative routing or emergency vehicle deployment strategy can be put in place.
- 8.9.14 Therefore, taking the above into consideration and given the very short duration of any temporary lane closure, the magnitude of impacts can be reduced to negligible, and the temporary adverse effect on driver severance and delay would be minor in significance, which is not significant in terms of the EIA Regulations.

AADT PERCENTAGE IMPACT ASSESSMENT SCREENING

- 8.9.15 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.
- 8.9.16 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.
- 8.9.17 Percentage impact calculations against a future baseline of 2027 have been undertaken for:
- > The trip generation assessment scenarios as set out in Paragraph 8.7.6; and
 - > The maximum two-way daily trip generation on each highway link shown in Volume 5, Annex 5.8.2 and Table 8.23.
- 8.9.18 The 2027 with committed developments and maximum VE vehicle movements are shown in Figure 8.20 and Figure 8.21.



LEGEND

- Onshore PIER Red Line Boundary
- Onshore Export Cable Corridor
- Onshore Cable Route Section Division
- National Grid Area of Search
- Onshore Substation Areas of Search
- Temporary Construction Compounds
- Works Access Required
- Haul Road Crossings
- Haul Road Access
- Core Access Route
- Local Access Route to Temporary Construction Compound
- XX Link Flow Count Location
- XX 2-way Traffic Flow

Data Source:
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PROJECT TITLE:
FIVE ESTUARIES OFFSHORE WINDFARM

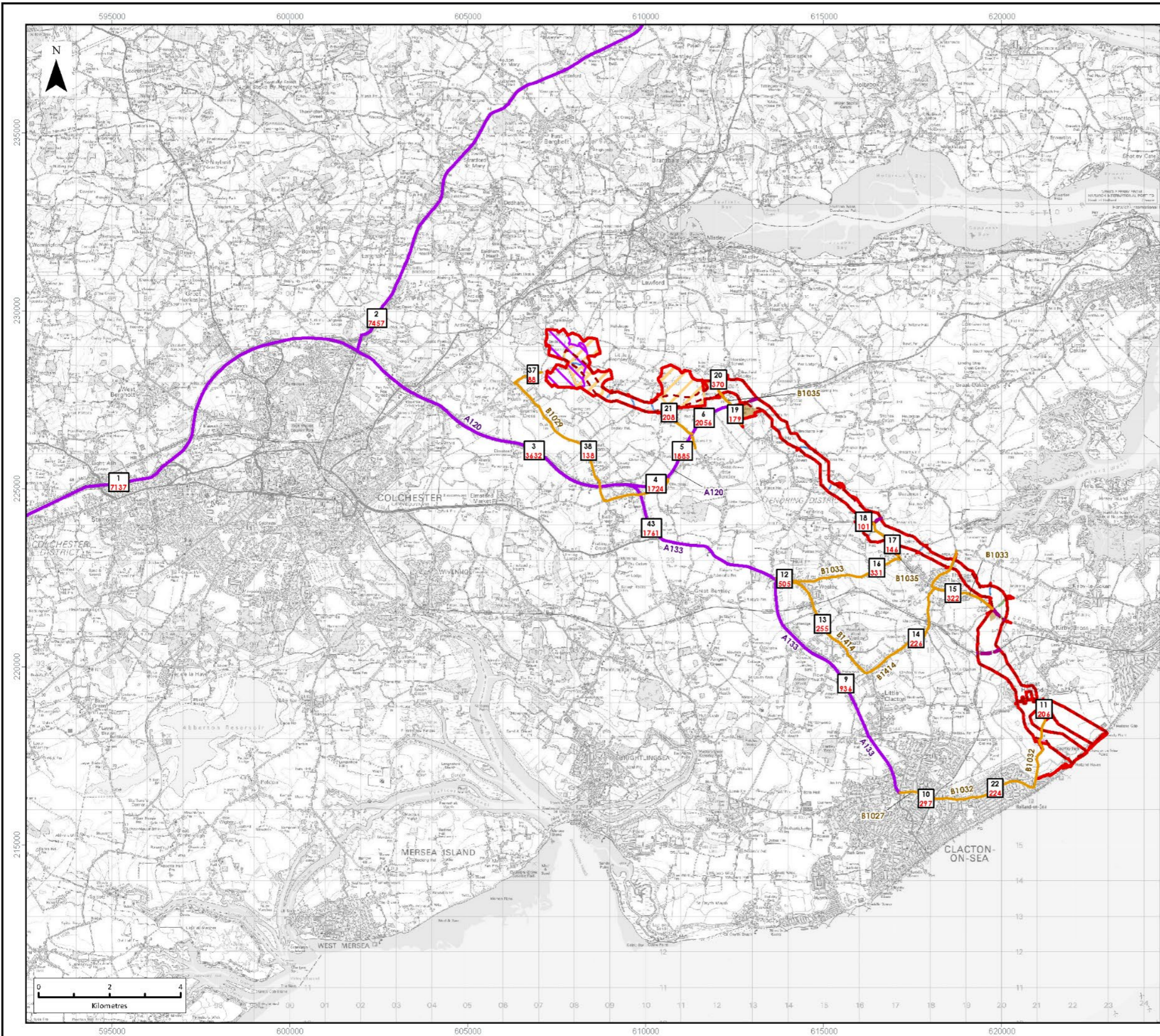
DRAWING TITLE:
2027 AADT + Committed Development Flows (Total)

VER	DATE	REMARKS	Drawn	Checked
1	20/02/2023	PIER Submission	DB	JS

DRAWING NUMBER:
FIGURE 8.20

SCALE: 1:110,000 PLOT SIZE: A3 DATUM: OSGB 1936 CO-ORDINATE SYSTEM: British National Grid





LEGEND

- Onshore PIER Red Line Boundary
- Onshore Export Cable Corridor
- Onshore Cable Route Section Division
- National Grid Area of Search
- Onshore Substation Areas of Search
- Temporary Construction Compounds
- Works Access Required
- Haul Road Crossings
- Haul Road Access
- Core Access Route
- Local Access Route to Temporary Construction Compound
- XX Link Flow Count Location
- XX 2-way Traffic Flow

Data Source:
 © Crown copyright [and database rights] (2022) 0100031673 OS OpenData.

PROJECT TITLE:
 FIVE ESTUARIES OFFSHORE WINDFARM

DRAWING TITLE:
 2027 AADT + Committed Development Flows (HGVs)

VER	DATE	REMARKS	Drawn	Checked
1	20/02/2023	PEIR Submission	DB	JS

DRAWING NUMBER:
 FIGURE 8.21

SCALE: 1:110,000 PLOT SIZE: A3 DATUM: OSGB 1936 CO-ORDINATE SYSTEM: British National Grid





Table 8.23: Maximum trip generation percentage impacts (Scenarios 1 to 3)

Link ID	Highway link	2027 with committed developments		VE peak trip generation		Percentage impact (%)	
		Total	HGV	Total	HGV	Total	HGV
1	A12 north of A120	6,7165	6,365	577	272	0.8	4.0
2	A12 south of A120	78,182	6,508	577	272	0.7	3.9
3	A120 between A12 and A133	50,852	3,084	1156	546	2.2	17.6
4	A120 between the A133 and Harwich Road	14,067	1,610	438	234	3.1	14.4
5	A120 between Harwich Road and Bentley Road	14,246	1,719	438	234	3.1	13.6
6	A120 between Bentley Road and B1035	14,426	1,827	438	234	3.0	12.8
8	A133 between B1033 and B1027	26,048	895	206	90	0.8	10.1
10	B1027 St John's Road/ Valley Road	15,639	219	206	90	1.3	41.1
11	B1032 Clacton Road	7,807	123	206	90	2.6	73.2
12	B1033 Colchester Road (west of B1441)	16,132	300	512	222	2.8	74.1
13	B1441 Clacton Road	6,413	148	290	116	4.2	78.0
14	B1414 Harwich Road	5,988	116	290	116	4.8	99.2
15	B1033 Frinton Road	13,220	218	290	116	2.2	52.9
16	B1033 Colchester Road (east of B1441)	10,813	238	223	107	2.0	44.8
17	B1035 Tendring Road	1,697	42	223	107	13.1	253.2
18	B1035 Thorpe Road	2,450	51	111	53	4.5	104.7
19	B1035 (south of A120)	6,024	134	111	53	1.8	39.7
20	B1035 Clacton Road	9,037	200	327	181	3.6	90.5
21	Bentley Road	1,019	29	327	181	32.1	625.1



Link ID	Highway link	2027 with committed developments		VE peak trip generation		Percentage impact (%)	
		Total	HGV	Total	HGV	Total	HGV
22	B1027 Frinton Road	8,130	141	206	90	2.5	63.7
37	Waterhouse Lane	480	14	103	73	22.7	560.8
38	B1029 Frating Road	2,491	67	103	73	4.4	116.0
43	A133 between A120 and B1033	36,786	1,473	718	312	2.1	21.5



- 8.9.19 Using the trip generation identified in Table 8.23, which shows the maximum predicted daily total and HGV traffic increases on each highway link 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.
- 8.9.20 The screening assessment, which identifies the sensitivity of each link to changes in traffic is shown in Table 8.24.



Table 8.24: Maximum trip generation percentage impacts

Link ID	Highway link	Percentage impact		Sensitivity	Threshold (%)		Assessment in PEIR and ES?
		Total	HGV		Total	HGV	
1	A12 north of A120	0.8	4.0	Negligible	30	30	No
2	A12 south of A120	0.7	3.9				
3	A120 between A12 and A133	2.2	17.6				
4	A120 between the A133 and Harwich Road	3.1	14.4				
5	A120 between Harwich Road and Bentley Road	3.1	13.6				
6	A120 between Bentley Road and B1035	3.0	12.8				
9	A133 between B1033 and B1027	0.8	10.1	Low	30	30	No
10	B1027 St John's Road/ Valley Road	1.3	41.1	High	10	30	Yes
11	B1032 Clacton Road	2.6	73.2	Low	30	30	Yes
12	B1033 Colchester Road (west of B1441)	2.8	74.1	Medium	10	30	Yes
13	B1441 Clacton Road	4.2	78.0	High	10	30	Yes
14	B1414 Harwich Road	4.8	99.2	Medium	10	30	Yes
15	B1033 Frinton Road	2.2	52.9	High	10	30	Yes
16	B1033 Colchester Road (east of B1441)	2.0	44.8	High	10	30	Yes
17	B1035 Tendring `Road	13.1	253.2	Medium	10	30	Yes
18	B1035 Thorpe Road	4.5	104.7	Low	30	30	Yes
19	B1035 (south of A120)	1.8	39.7	Negligible	30	30	Yes



Link ID	Highway link	Percentage impact		Sensitivity	Threshold (%)		Assessment in PEIR and ES?
		Total	HGV		Total	HGV	
20	B1035 Clacton Road	3.6	90.5	Low	30	30	Yes
21	Bentley Road	32.1	625.1	Low	30	30	Yes
22	B1027 Frinton Road	2.5	63.7	High	10	30	Yes
37	Waterhouse Lane	22.7	560.8	High	10	30	Yes
38	B1029 Frating Road	4.4	116.0	Medium	10	30	Yes
43	A133 between A120 and B1033	2.1	21.5	Low	30	30	No



8.9.21 The highway links that are identified for further assessment in terms of the impact of a change in traffic volume within the PEIR and ES are summarised in Table 8.25, with the assessment scenario(s) that the potential impacts related to:

Table 8.25: Highway links taken forward for assessment

Link ID	Highway link	Percentage impact		Assessment Scenario
		Total	HGV	
10	B1027 St John's Road/ Valley Road	1.3	41.1	All
11	B1032 Clacton Road	2.6	73.2	All
12	B1033 Colchester Road (west of B1441)	2.8	74.1	All
13	B1441 Clacton Road	4.2	78.0	All
14	B1414 Harwich Road	4.8	99.2	All
15	B1033 Frinton Road	2.2	52.9	All
16	B1033 Colchester Road (east of B1441)	2.0	44.8	All
17	B1035 Tendring `Road	13.1	253.2	All
18	B1035 Thorpe Road	4.5	104.7	All
19	B1035 (South of A120)	1.8	39.7	All
20	B1035 Clacton Road	3.6	90.5	1 only
21	Bentley Road	32.1	625.1	2 and 3
22	B1027 Frinton Road	2.5	63.7	All
37	Waterhouse Lane	22.7	560.8	3 only
38	B1029 Frating Road	4.4	116.0	3 only

COMMUNITY SEVERANCE

8.9.22 Table 8.26 summarises the level of effects on these links with a negligible magnitude of impact:

Table 8.26: Highway links - negligible magnitude of impact (community severance)

Link ID	Highway link	Sensitivity	Level of effect
10	B1027 St John's Road/ Valley Road	High	Minor
11	B1032 Clacton Road	Low	Negligible
12	B1033 Colchester Road (west of B1441)	Medium	Negligible
13	B1441 Clacton Road	High	Negligible
14	B1414 Harwich Road	Medium	Negligible
15	B1033 Frinton Road	High	Negligible
16	B1033 Colchester Road (east of B1441)	High	Negligible
18	B1035 Thorpe Road	Low	Negligible



Link ID	Highway link	Sensitivity	Level of effect
19	B1035 (south of A120)	Low	Negligible
20	B1035 Clacton Road	Low	Negligible
21	Bentley Road	Low	Negligible
22	B1027 Frinton Road	High	Minor
38	B1029 Frating Road	Medium	Negligible

8.9.23 In summary, there would be a **negligible or minor adverse effect** on community severance and dust and dirt on all the highway links in Table 8.26, **which is not significant** in terms of the EIA Regulations.

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

- > B1035 Tendring Road, which has medium sensitivity, would result in an **adverse effect that has minor significance, which is not significant** in terms of the EIA Regulations; and
- > Waterhouse Lane (SSA West only), which has high sensitivity, would result in an **adverse effect that has moderate significance, which is significant** in terms of the EIA Regulations.

8.9.25 For Bentley Road which has low sensitivity, a medium magnitude of impact would result in an **adverse effect that is minor in significance which is not significant** in terms of the EIA Regulations.

8.9.26 For the significant effect on community severance on Waterhouse Lane (SSA West only), the magnitude of impact could be reduced to negligible given HGVs already use the route and the number of pedestrian movements across the lane are likely to be limited, given there are no local facilities along it. This would result in an effect that has **minor significance, which is not significant** in terms of the EIA Regulations.

VULNERABLE ROAD USERS AND ROAD SAFETY

B1035 TENDRING ROAD/ BENTLEY ROAD/ WATERHOUSE LANE

8.9.27 In Table 8.3, 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 and dust and dirt set out in Table 8.26. 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 26, **which is not significant** in terms of the EIA Regulations.

8.9.28 The change in traffic flow on the B1035 Tendring Road, Bentley Road and Waterhouse Lane is greater than 10% and according to Table 8.3, a qualitative assessment of the accident records is required to identify the adverse magnitude of impact.



- 8.9.29 There has only been one PIA on the B1035 Tendring Road in the assessment period, at a location not in the vicinity of the proposed haul road access zone. The PIA occurred in darkness, was due to driver error and did not involve a WCH.
- 8.9.30 The B1035 Tendring Road is considered a highway link with medium sensitivity and taking the very low accident rate into account and with the embedded mitigation including the Outline CTMP (Volume 5, Annex 8.3) , the magnitude of impact of vulnerable road users and road safety is considered to be negligible, which would result in an **adverse effect that is minor in significance which is not significant** in terms of the EIA Regulations.
- 8.9.31 There has only been one PIA on Bentley Road in the assessment period at a location not in the vicinity of the proposed haul road access zone. The PIA was due to driver error and did not involve a WCH.
- 8.9.32 Bentley Road is considered a highway link with low sensitivity and taking the very low accident rate into account and with the embedded mitigation including the Outline CTMP (Volume 5, Annex 8.3) the magnitude of impact of vulnerable road users and road safety is considered to be negligible, which would result in an **adverse effect that is negligible in significance which is not significant** in terms of the EIA Regulations.
- 8.9.33 There have been no PIAs on Waterhouse Lane in the assessment period. Waterhouse Lane is considered a highway link with high sensitivity and given no accidents have occurred, and with the embedded mitigation including the Outline CTMP (Volume 5, Annex 8.3) the magnitude of impact of vulnerable road users and road safety is considered to be negligible, which would result in an **adverse effect that is minor in significance which is not significant** in terms of the EIA Regulations.

PEDESTRIAN AMENITY

- 8.9.34 In Table 8.3, 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 8-27 summarises the level of effects on these links:

Table 8.27: Highway links - negligible magnitude of impact (pedestrian amenity)

Link ID	Highway link	Sensitivity	Level of effect
10	B1027 St John's Road/ Valley Road	High	Minor
11	B1032 Clacton Road	Low	Negligible
12	B1033 Colchester Road (west of B1441)	Medium	Negligible
13	B1441 Clacton Road	High	Negligible
14	B1414 Harwich Road	Medium	Negligible
15	B1033 Frinton Road	High	Negligible



16	B1033 Colchester Road (east of B1441)	High	Negligible
19	B1035 (south of A120)	Low	Negligible
20	B1035 Clacton Road	Low	Negligible
22	B1027 Frinton Road	High	Minor

- 8.9.35 The change in HGV traffic flow on the B1414 Harwich Road, B1035 Tendring Road, B1035 Thorpe Road, Bentley Road and Waterhouse Lane is greater than 100% and according to Table 8.3 a review based upon the quantum of vehicles, vehicle speed and pedestrian footfall is required to identify the adverse magnitude of impact.
- 8.9.36 For the B1035 Thorpe Road, the percentage increase in the number of HGVs is only marginally over 100% (110.7%) and given the very low number of daily HGVs on this highway link in the baseline (44), and limited receptors, has also been assigned a negligible magnitude of impact. As the B1035 Thorpe Road has low sensitivity, this would result in an **adverse effect that is negligible in significance which is not significant** in terms of the EIA Regulations.
- 8.9.37 For the B1414 Harwich Road, which has medium sensitivity, the percentage increase in the number of HGVs is also only marginally over 100% (105%); however, given the greater number of receptors on this route, has been assigned a low magnitude of impact, which would result in an **adverse effect that is minor in significance which is not significant** in terms of the EIA Regulations.
- 8.9.38 For the B1035 Tendring Road, which has medium sensitivity, a 267.9% 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 on Crashmap). This would result in an **adverse effect that is minor in significance which is not significant** in terms of the EIA Regulations.
- 8.9.39 For Bentley Road, which has low sensitivity, a 652.9% 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 (27), and limited receptors. This would result in an **adverse effect that is negligible in significance which is not significant** in terms of the EIA Regulations.
- 8.9.40 For Waterhouse Lane (SSA West only), which has high sensitivity, a 560.8% increase in the number of HGVs is considered to be a medium magnitude of impact, given the very low number of daily HGVs on this highway link in the baseline (13), the number of dwellings close to the carriageway, which is narrow and since there are no footways. This would result in an **adverse effect that is major in significance which is significant** in terms of the EIA Regulations.



DUST AND DIRT

8.9.41 In Table 8.3, 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 and dust and dirt set out in Table 8.26. In summary, there would be a **negligible of minor adverse effect** on vulnerable road users and road safety on all the highway links in Table 8.26, **which is not significant** in terms of the EIA Regulations.

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

- > B1035 Tendring Road, which has medium sensitivity, would result in an **adverse effect that has minor significance, which is not significant** in terms of the EIA Regulations; and
- > Waterhouse Lane (SSA West only), which has high sensitivity, would result in an **adverse effect that has moderate significance, which is significant** in terms of the EIA Regulations.

8.9.43 For the significant effect of dust and dirt on Waterhouse Lane, given the nature of the route, speeds of vehicles would be very low and with the measures set out in the Outline CTMP, including wheel washing facilities will control the deposition of dust and dirt onto the public highway, the magnitude of impact can be reduced to negligible. This would result in **an adverse effect that has minor significance, which is not significant** in terms of the EIA Regulations.

USERS OF PUBLIC RIGHTS OF WAY

8.9.44 The assessment of the potential impacts of users of PRow is presented in Table 8.28 to Table 8.32 for the onshore ECC Route Sections 1,3, 4 and 5. There are no PRow in ECC Route Section 2.



Table 8.28: Assessment of users of PRoW (ECC Route Section 1)

PRoW	Sensitivity	Impact	Assessment	Magnitude of impact	Level of effect
167_29	High	Temporary crossing by VE construction traffic (crossed by the ECC using HDD or similar trenchless technique)	<p>The route would be kept open using a gated crossing (see proposed management measures in the appended Outline PAMP (Volume 5, Annex 8.4) Appropriate signage would be provided advising of an alternative route</p> <p>The frequency of the vehicle movements associated with the construction phase of VE that would cross this PRoW would be negligible therefore very short delays.</p>	Negligible	Minor adverse (not significant)
164_5	High	Temporary crossing by onshore ECC and VE construction traffic on haul road	<p>Affected by the southern ECC alignment (as it crosses Clacton Road) option only.</p> <p>The route would either:</p> <ul style="list-style-type: none"> > be kept open using a gated crossing (see proposed management measures in the appended Outline PAMP (Volume 5, Annex 8.4)) and temporarily diverted when the works are undertaken at this location; or > temporary diversion along the edge of the ECC for the duration of the construction works <p>Could require two crossing locations due to the alignment which following the ECC and a longer period for the diversion.</p> <p>The temporary diverted route around the work area would be <50 m additional journey length.</p>	Negligible	Minor adverse (not significant)



PRoW	Sensitivity	Impact	Assessment	Magnitude of impact	Level of effect
164_6	Medium	Shared route with VE construction traffic	<p>If the alignment of Mill Lane is used for VE construction vehicles crossing from the ECC on the southern side of Little Clacton Road, PRoW users would be impacted for up to 300 m.</p> <p>Option for a construction access road adjacent to Mill Lane</p> <p>Appropriate warning signage would be provided.</p> <p>No temporary closure or diversion would be required.</p>	Low	Minor adverse (not significant)
164_11	Medium	Temporary crossing by onshore ECC and VE construction traffic on haul road	The route would be kept open using a gated crossing (see proposed management measures in the Outline PAMP (Volume 5, Annex 8.4) and temporarily diverted when the works are undertaken at this location.	Negligible	Negligible adverse (not significant)
164_138	Medium		The temporary diverted route around the work area would be <50 m additional journey length		
164_10	Medium	Temporary crossing by onshore ECC and VE construction traffic on haul road	<p>Affected if the ECC route alignment is via the eastern crossing of Little Clacton Road</p> <p>The route would be kept open using a gated crossing (see proposed management measures in the Outline</p>	Negligible	Negligible adverse (not significant)



PRoW	Sensitivity	Impact	Assessment	Magnitude of impact	Level of effect
164_7	Medium		<p>PAMP (Volume 5, Annex 8.4) and temporarily diverted when the works are undertaken at this location.</p> <p>The temporary diverted route around the work area would be <50 m additional journey length</p>	Negligible	Negligible adverse (not significant)

Table 8.29: Assessment of users of PRoW (ECC Route Section 3)

PRoW	Sensitivity	Impact	Assessment	Magnitude of impact	Level of effect
180_13	Medium	Temporary crossing by onshore ECC and VE construction traffic on haul road	<p>The route would be kept open using a gated crossing (see proposed management measures in the Outline PAMP (Volume 5, Annex 8.4) and temporarily diverted when the works are undertaken at this location.</p> <p>The temporary diverted route around the work area would be <50 m additional journey length.</p>	Negligible	Negligible adverse (not significant)
180_7	Medium	Shared route with VE construction traffic / crossed by off route haul road	<p>The route would either:</p> <ul style="list-style-type: none"> > be kept open using a gated crossing (see proposed management measures in the appended Outline PAMP (Volume 5, Annex 8.4) and temporarily diverted when the works are undertaken at this location; or 	Negligible	Minor adverse (not significant)



PRoW	Sensitivity	Impact	Assessment	Magnitude of impact	Level of effect
			<p>> temporary diversion along the edge of the ECC for the duration of the construction works</p> <p>The temporary diverted route would be <50 m additional journey length.</p>		
180_5	Medium	Temporary crossing by onshore ECC and VE construction traffic on haul road	The small section of the route that could be impacted would be diverted to the edge of the ECC for the duration of the construction works.	Negligible	Minor adverse (not significant)
180_4	Medium			Negligible	Minor adverse (not significant)
180_3	Medium	Temporary crossing by onshore ECC and VE construction traffic on haul road	<p>The route would be kept open using a gated crossing (see proposed management measures in the appended Outline PAMP (Volume 5, Annex 8.4) and temporarily diverted when the works are undertaken at this location.</p> <p>The temporary diverted route around the work area would be <50 m additional journey length.</p>	Negligible	Minor adverse (not significant)
180_1	Medium	Temporary crossing by onshore ECC, VE construction traffic on haul road and TCC	The section of the route that would be crossed by the ECC / haul roads be kept open using a gated crossing (see proposed management measures in the appended Outline PAMP (Volume 5, Annex 8.4) and temporarily diverted when the works are undertaken at this location.	Low	Minor adverse (not significant)



PRoW	Sensitivity	Impact	Assessment	Magnitude of impact	Level of effect
			<p>The section of the route that would cross the TCC would be diverted around the edge of the TCC for the duration of the construction period.</p> <p>The temporary diverted route around the TCC could be between 50 and 200 m additional journey length.</p>		
159_18	Medium	Temporary crossing by onshore ECC and VE construction traffic on haul road	The route would be kept open using a gated crossing (see proposed management measures in the appended Outline PAMP (Volume 5, Annex 8.4) and temporarily diverted when the works are undertaken at this location.	Negligible	Minor adverse (not significant)
180_18	Medium		The temporary diverted route around the work area would be <50 m additional journey length.	Negligible	Minor adverse (not significant)

Table 8.30: Assessment of users of PRoW (ECC Route Section 4)

PRoW	Sensitivity	Impact	Assessment	Magnitude of impact	Level of effect
179_22	Medium	Temporary crossing by onshore ECC and VE construction traffic on haul road and off route haul road	The route would be kept open using gated crossings (see proposed management measures in the appended Outline PAMP (Volume 5, Annex 8.4) and temporarily diverted when the works are undertaken at the ECC.	Negligible	Negligible adverse (not significant)



PRoW	Sensitivity	Impact	Assessment	Magnitude of impact	Level of effect
			The temporary diverted route around the work area would be <50 m additional journey length.		
179_8	Medium	Temporary crossing by onshore ECC and VE construction traffic on haul road and off route haul road	<p>The route would be kept open using a gated crossing (see proposed management measures in the appended Outline PAMP (Volume 5, Annex 8.4) and temporarily diverted when the works are undertaken at the ECC.</p> <p>The temporary diverted route around the work area would be <50 m additional journey length.</p>	Negligible	Negligible adverse (not significant)
179_3	Medium	Temporary crossing by onshore ECC and VE construction traffic on haul road	<p>The route would be kept open using a gated crossing (see proposed management measures in the appended Outline PAMP (Volume 5, Annex 8.4) and temporarily diverted when the works are undertaken at this location.</p> <p>The temporary diverted route around the work area would be <50 m additional journey length.</p>	Negligible	Negligible adverse (not significant)
179_1	Medium			Negligible	Negligible adverse (not significant)
183_31	Medium			Negligible	Negligible adverse (not significant)



PRoW	Sensitivity	Impact	Assessment	Magnitude of impact	Level of effect
183_32	Medium			Negligible	Negligible adverse (not significant)
183_15	Medium	Temporary crossing of VE construction traffic in TCC	<p>The section of the route that would cross the TCC would be diverted around the edge of the TCC for the duration of the construction period.</p> <p>The temporary diverted route around the TCC could be between 50 and 200 m additional journey length.</p>	Low	Negligible adverse (not significant)

Table 8.31: Assessment of users of PRoW (ECC Route Section 5)

PRoW	Sensitivity	Impact	Assessment	Magnitude of impact	Level of effect
172_20	Medium	Temporary crossing of VE construction traffic in SSA East	The section of the route that would cross the TCC would be diverted around the edge of the OnSS zone for the duration of the construction period.	Low	Negligible adverse (not significant)



PRoW	Sensitivity	Impact	Assessment	Magnitude of impact	Level of effect
			The temporary diverted route around the TCC could be between 50 and 200 m additional journey length.		
		Potential permanent impact of OnSS West, depending on the final siting	The section of the route that could be impacted by the siting of the OnSS would be diverted between 50 and 200 m additional journey length.		
172_21	Medium	Temporary crossing by onshore ECC and VE construction traffic on haul road	The small section of the route that could be impacted would be diverted to the edge of the ECC for the duration of the construction works.	Negligible	Negligible adverse (not significant)
172_17	Medium	Temporary crossing by onshore ECC and VE construction traffic on haul road	<p>The route would be kept open using a gated crossing (see proposed management measures in the appended Outline PAMP (Volume 5, Annex 8.4) and temporarily diverted when the works are undertaken at this location.</p> <p>The temporary diverted route around the work area would be <50 m additional journey length.</p>	Negligible	Negligible adverse (not significant)



PRoW	Sensitivity	Impact	Assessment	Magnitude of impact	Level of effect
172_16	Medium	Temporary crossing of VE construction traffic in SSA West	<p>The section of the route that would cross the TCC would be diverted around the edge of the OnSS zone for the duration of the construction period.</p> <p>The temporary diverted route around the TCC could be between 50 and 200 m additional journey length.</p>	Low	Negligible adverse (not significant)
		Potential permanent impact of OnSS West, depending on the final siting	The section of the route that could be impacted by the siting of the OnSS would be diverted between 50 and 200 m additional journey length.		
172_15	Medium	Temporary crossing of VE construction traffic in SSA West	<p>The section of the route that would cross the TCC would be diverted around the edge of the OnSS zone for the duration of the construction period.</p> <p>The temporary diverted route around the TCC could be between 50 and 200 m additional journey length.</p>		



PRoW	Sensitivity	Impact	Assessment	Magnitude of impact	Level of effect
		Potential permanent impact of OnSS West, depending on the final siting	The section of the route that could be impacted by the siting of the OnSS would be diverted between 50 and 200 m additional journey length.		



8.9.45 Based on the analysis in Table 8.28 to Table 8.31 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.

8.10 ENVIRONMENTAL ASSESSMENT: DECOMMISSIONING PHASE

8.10.1 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 8.9. 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.

8.10.2 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.

8.10.3 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.

8.11 ENVIRONMENTAL ASSESSMENT: CUMULATIVE EFFECTS

8.11.1 As set out in Paragraphs 8.6.37 to 8.6.41, any consented development schemes impacting highway links within the VE Traffic and Transport study area have been added to the 2027 construction year baseline flows. NSIPs that may have overlapping construction programmes are considered as part of a cumulative assessment.

8.11.2 The NSIPs that may coincide with the construction phase of VE and impact on some of the highway links that are assessed in this chapter are:

- > North Falls Offshore Wind; and
- > East Anglia Connection Node Substation (EACN Substation).

8.11.3 As there is uncertainty regarding the potential highway links that would be impacted and the number of likely vehicle movement on those links associated with these projects, a full cumulative impact assessment cannot be undertaken at this stage. However, given the ECC for the North Falls project would follow a very similar alignment as VE, and would be of a similar length, a high level estimate of the potential cumulative traffic impacts with that project has been undertaken, by doubling the forecast vehicle movements associated with the construction of VE. This is a broad estimate and does not include any vehicle movements associated with the EACN Substation.

8.11.4 The high-level assessment is shown in Table 8.32.



Table 8.32: High level cumulative assessment

Link ID	Location	2022			2027			2027 plus committed developments			VE and North Falls		Percentage Increase (%)	
		AADT		HGV %	AADT		HGV %	AADT		HGV %	Indicative peak daily trips		Total vehicles	HGVs
		Total vehicles	HGVs	Total vehicles	HGVs	Total vehicles	HGVs	Total vehicles	HGVs					
1	A12 north of A120	60,190	5,704	9.5	67,165	6,365	9.5	68,440	6,870	10.0	1,154	544	1.7	7.9
2	A12 south of A120	70,063	5,832	8.3	78,182	6,508	8.3	79,457	7,013	8.8	1,154	544	1.5	7.8
3	A120 between A12 and A133	44,278	2,685	6.1	50,852	3,084	6.1	52,052	3,094	5.9	2,312	1,092	4.4	35.3
4	A120 between the A133 and Harwich Road	12,248	1,402	11.4	14,067	1,610	11.4	14,097	1,620	11.5	876	468	6.2	28.9
5	A120 between Harwich Road and Bentley Road	12,405	1,497	12.1	14,246	1,719	12.1	14,246	1,719	12.1	876	468	6.1	27.2



Link ID	Location	2022			2027			2027 plus committed developments			VE and North Falls		Percentage Increase (%)	
		AADT		HGV %	AADT		HGV %	AADT		HGV %	Indicative peak daily trips		Total vehicles	HGVs
		Total vehicles	HGVs		Total vehicles	HGVs		Total vehicles	HGVs		Total vehicles	HGVs		
6	A120 between Bentley Road and B1035	12,561	1,591	12.7	14,426	1,827	12.7	14,426	1,827	12.7	876	468	6.1	25.6
9	A133 between B1033 and B1027	22,681	780	3.4	26,048	895	3.4	26,834	895	3.3	412	180	1.5	20.1
10	B1027 Valley Road	13,617	191	1.4	15,639	219	1.4	15,639	219	1.4	412	180	2.6	82.2
11	B1032 Clacton Road	6,798	107	1.6	7,807	123	1.6	7,807	123	1.6	412	180	5.3	146.4
12	B1033 Colchester Road (west of B1441)	14,046	261	1.9	16,132	300	1.9	18,294	300	1.6	1024	444	5.6	148.1



Link ID	Location	2022			2027			2027 plus committed developments			VE and North Falls		Percentage Increase (%)	
		AADT		HGV %	AADT		HGV %	AADT		HGV %	Indicative peak daily trips		Total vehicles	HGVs
		Total vehicles	HGVs		Total vehicles	HGVs		Total vehicles	HGVs		Total vehicles	HGVs		
13	B1441 Clacton Road	5,584	129	2.3	6,413	148	2.3	6,813	148	2.2	579	231	8.5	155.9
14	B1414 Harwich Road	5,214	101	1.9	5,988	116	1.9	5,988	116	1.9	579	231	9.7	198.3
15	B1033 Frinton Road	11,511	190	1.7	13,220	218	1.7	13,220	218	1.7	579	231	4.4	105.8
16	B1033 Colchester Road (east of B1441)	9,415	207	2.2	10,813	238	2.2	11,213	238	2.1	445	213	4.0	89.6
17	B1035 Tendring Road	1,478	37	2.5	1,697	42	2.5	1,697	42	2.5	445	213	26.2	506.5
18	B1035 Thorpe Road	2,133	44	2.1	2,450	51	2.1	2,450	51	2.1	222	106	9.1	209.4



Link ID	Location	2022			2027			2027 plus committed developments			VE and North Falls		Percentage Increase (%)	
		AADT		HGV %	AADT		HGV %	AADT		HGV %	Indicative peak daily trips		Total vehicles	HGVs
		Total vehicles	HGVs		Total vehicles	HGVs		Total vehicles	HGVs		Total vehicles	HGVs		
19	B1035 (south of A120)	5,245	116	2.2	6,024	134	2.2	6,024	134	2.2	222	106	3.7	79.3
20	B1035 Clacton Road	7,869	174	2.2	9,037	200	2.2	9,037	200	2.2	654	362	7.2	180.9
21	Bentley Road	887	25	2.8	1,019	29	2.8	1,019	29	2.8	654	362	64.2	1,250.2
22	B1027 Frinton Road	7,079	123	1.7	8,130	141	1.7	8,130	141	1.7	412	180	5.1	127.3
37	Waterhouse Lane	418	12	2.9	480	14	2.9	480	14	2.9	105	75	21.9	544.2
38	B1029 Frating Road	2,169	58	2.7	2,491	67	2.7	2,491	67	2.7	105	75	4.2	112.6
43	A133 between A120 and B1033	32,030	1,283	4.0	36,786	1473	4.0	37,956	1473	3.9	1,436	624	3.8	42.3



8.11.5 As Table 8.32 shows, based on this high level cumulative assessment, there would be a particularly high increase in HGVs on Bentley Road should VE and North Falls be constructed simultaneously and both projects use this link for access (also, there could be additional vehicles using Bentley Road associated with the construction of the EACN Substation, depending on the access route used for that project).

8.11.6 Discussions are ongoing between the VE and North Falls OWF project teams regarding potential cumulative impacts and options to coordinate construction accesses along the respective ECCs and OnSS locations. Given the EACN Substation may also use the same construction access routes as VE and North Falls from the A120, including Bentley Road, a strategy to minimise impacts for these routes will be given consideration for assessment in the ES.

The A120/ Bentley Road junction was identified as a pinch-point (Paragraph 62 in Volume 5, Annex 8.1: Traffic and Transport Baseline Report) in terms of the geometry and ability for two HGVs to pass safely without some potential physical improvements and traffic management measures. Given the potential for the number of HGVs using this junction should North Falls and/ or EACN Substation be constructed simultaneously and use this junction, VE will explore options to minimise the impact at this junction wherever practicable.

8.12 TRANSBOUNDARY EFFECTS

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

8.13 SUMMARY OF EFFECTS

8.13.1 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.

8.13.2 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 August 2022.

8.13.3 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, DMRB and the use of professional judgement.

8.13.4 Peak hour vehicle movements associated with the construction 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.

8.13.5 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.



- 8.13.6 Based on a screening assessment using Rules 1 and 2 in GEART, all highway links with the exception of the A12, A120, A133 and B1035 (south of the A120) required full assessment under EIA regulations, for the impacts of an increase in VE construction vehicle movements. The outcome of the assessment identifies one significant effect (community severance on Waterhouse Lane using that construction access route for SSA West) .
- 8.13.7 The consideration of WCH users of all PRoW within the study area that were identified as being directly or indirectly impacted by the onshore ECC have been assessed, using the guidance in DMRB LA 112. The outcome does not include any significant effects.
- 8.13.8 An assessment of the decommissioning phase was not required as the likely effects would be no greater than the construction phase.
- 8.13.9 A high level cumulative assessment has been undertaken based on some estimated traffic flows associated with North Falls and some consideration of EACN Substation and the potential to coordinate with both projects to endeavour to minimise cumulative impacts wherever possible. A full cumulative assessment will be set out in the ES.
- 8.13.10 A summary of the assessment outcomes is provided in Table 8.33.

8.14 NEXT STEPS

- 8.14.1 The following steps will be undertaken in order to progress the Traffic and Transport assessment from PEIR stage to DCO Application stage:
- > Once more detailed project design information is available, e.g. selection of the OnSS location and construction access routes confirmed, the assessment presented in this chapter along with the proposed mitigation will be reviewed, updated if necessary, and presented in the DCO application;
 - > Any feedback received from consultees in relation to the PEIR will be reviewed, a response provided, and if any updates to the assessment and/ or the proposed mitigation are required this will be done as part of the DCO application; and
 - > Further liaison with NGET and North Falls regarding the potential cumulative impacts with VE, to ensure a robust assessment in the DCO application, and to consider options to coordinate construction and operational accesses along the respective ECCs and OnSS locations, should this be practical and beneficial



Table 8.33: Summary of effects

Description of Impact	Effects	Additional mitigation measures	Residual impact
Construction			
Driver delay and severance - increase in vehicle movements	Negligible	Measures within Outline CTMP (Volume 5, Annex 8.3) and the Outline WTP	Negligible adverse (not significant)
Driver delay and severance - use of open trenching	Negligible to minor	Measures within Outline CTMP (Volume 5, Annex 8.3)	Negligible adverse (not significant)
Community severance	Negligible to moderate		Negligible adverse (not significant)
Vulnerable road users and road safety	Negligible		Negligible adverse (not significant)
Pedestrian amenity	Negligible to major		Negligible adverse (not significant)
Dust and dirt	Negligible to moderate		Negligible adverse (not significant) to major adverse (significant)
Users of PRoW	Negligible to minor	Measures within Outline PAMP (Volume 5, Annex 8.4)	Negligible adverse (not significant)

8.15 REFERENCES

- Department of Energy and Climate Change (2011a). Overarching National Policy Statement for Energy (EN-1).
- Department of Energy and Climate Change (2011b). National Policy Statement for Renewable Energy Infrastructure (EN-3).
- Department of Energy and Climate Change (2011b). National Policy Statement for Electricity Networks Infrastructure (EN-5).
- Department of Energy and Climate Change (2011a). Draft Overarching National Policy Statement for Energy (EN-1).
- Department of Energy and Climate Change (2011b). Draft National Policy Statement for Renewable Energy Infrastructure (EN-3).
- Department of Energy and Climate Change (2011b). Draft National Policy Statement for Electricity Networks 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

The logo for Five Estuaries Offshore Wind Farm. The word "FIVE" is written in a large, sans-serif font. The letter 'I' is grey, 'V' is purple, and 'E' is pink. To the right of "FIVE" are three wavy lines representing water, colored blue, green, and yellow from top to bottom. Below "FIVE" is the word "ESTUARIES" in a large, grey, sans-serif font. At the bottom of the logo is the text "OFFSHORE WIND FARM" in a smaller, grey, sans-serif font.

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