

Viking CCS pipeline

# Preliminary Environmental Information Report Volume II

Main PEIR

Applicant: Chrysoar Production (U.K.) Limited,  
a Harbour Energy Company

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Chapter 12

# Traffic and Transport



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# 12 Traffic and Transport

## 12.1 Introduction

- 12.1.1 This chapter of the Preliminary Environmental Impact Assessment (PEIR) considers the potential traffic and transport effects of the Viking CCS Pipeline (hereafter referred to as 'the Project'). The objectives of the chapter are to:
- Describe the baseline environment in relation to traffic and transportation;
  - Outline the methods and assessment to be undertaken for inclusion within the ES; and
  - Identify any potential effects on users of the local transport network, including Public Rights of Way (PRoW) and cycle routes (including the National Cycle Network), that may arise because of the Project and any potential mitigation measures.
- 12.1.2 This chapter should be read in conjunction with *Chapter 13: Noise and Vibration* and effects relating to air quality are considered in *Chapter 14: Air Quality*.
- 12.1.3 This chapter is supported by *PEIR Volume IV: Appendix 12-1: Transport Preliminary Construction Programme*.

## 12.2 Legislation, Policy and Guidance

### National Planning Policy

- 12.2.1 This chapter takes into consideration the relevant National Policy Statements (NPS), including the drafts published in September 2021, which are matters that will be important to the decision-making process. The relevant NPS are:
- Overarching National Policy Statement for Energy (EN1) (Ref 12-1); and
  - National Policy Statement for Oil and Gas Supply and Storage (EN-4) (Ref 12-3).
- 12.2.2 The NPSs include specific criteria and issues that should be included in an applicants' assessment of the effects, and how the decision maker should consider these in their decision making. In regard to traffic and transportation, only EN-1 directly applies.
- 12.2.3 The Government is currently reviewing and updating the EN-1 and EN-4 to reflect its policies and strategic approach for the energy system as set out in the Energy White Paper (December 2020) (Ref 12-5), and to ensure that the planning policy framework enables the delivery of the infrastructure required for the country's transition to net zero carbon emissions. As part of the Energy NPS review process, the Government published a suite of Draft Energy NPSs for consultation on 6 September 2021.

### National Planning Policy Framework

- 12.2.4 The National Planning Policy Framework (NPPF) (Ref 12-6) provides a framework for local communities and authorities to develop relevant local development plans and strategies. A revised version of NPPF was released in July 2021.
- 12.2.5 The NPPF has two key themes:
- Providing a greater level of integration and simplification of the planning policies governing new development nationally; and
  - Contribute to the achievement of sustainable development from an economic, social and environmental perspective.

- 12.2.6 The NPPF has a presumption in favour of sustainable development, which should be reflected in local development plans and frameworks to ensure that sustainable development and the needs of an area are identified and subsequently approved without delay. The NPPF is based on a range of core planning principles, which are aimed at supporting the focus on sustainable plan-led development.
- 12.2.7 Transport specific policies play a key role in supporting and achieving the core planning principles and are intrinsically linked to the objective of sustainable development. The NPPF specifically states that development should only be prevented or refused on transport grounds if there would be an unacceptable impact on highway safety or where the residual cumulative impacts of development are severe.
- 12.2.8 The core planning principles above provide a framework to provide inclusive, accessible, well connected and sustainable development.
- 12.2.9 Extracts from the National Planning Policy relevant to Traffic and Transport is detailed in **Table 12-1**.

**Table 12-1: National Planning Policy Relevant to Traffic and Transport**

Policy Reference	Policy Context
<b>National Policy Statements</b>	
Overarching National Policy Statement for Energy (EN-1) (Ref 12-1)	
Paragraph 5.14.3	<i>“if a project is likely to have significant transport implications, the applicant’s ES...should include a transport assessment, using the NATA/TAG methodology stipulated in Department for Transport guidance, or any successor to such methodology. Applicants should consult the Highways Agency and Highways Authorities as appropriate on the assessment and mitigation”.</i>
Paragraph 5.14.9	<i>“where mitigation is needed, possible demand management measures must be considered and if feasible and operationally reasonable, required, before considering requirements for the provision of new inland transport infrastructure to deal with remaining transport impacts”.</i>
Paragraph 5.14.12	<i>“the Secretary of State may attach requirements to a consent where there is likely to be substantial HGV traffic that:</i> <ul style="list-style-type: none"> <li>• <i>control numbers of HGV movements to and from the site in a specified period during its construction and possibly on the routing of such movements;</i></li> <li>• <i>make sufficient provision for HGV parking, either on the site or at dedicated facilities elsewhere, to avoid ‘overspill’ parking on public roads, prolonged queuing on approach roads and uncontrolled on-street HGV parking in normal operating conditions; and</i></li> <li>• <i>ensure satisfactory arrangements for reasonably foreseeable abnormal disruption, in consultation with network providers and the responsible police force.”</i></li> </ul>
Draft Overarching National Policy Statement for Energy (EN-1) (Ref 12-2)	
Paragraph 5.14.3	<i>“If a project is likely to have significant transport implications, the applicant’s ES...should include a transport assessment, using the NATA/WebTAG127</i>

Policy Reference	Policy Context
<b>National Policy Statements</b>	
	<i>methodology stipulated in Department for Transport (DfT) guidance, or any successor to such methodology. Applicants should consult the Highways England and Highways Authorities as appropriate on the assessment and mitigation.”</i>
Paragraph 5.14.9	<i>“Where mitigation is needed, possible demand management measures must be considered and if feasible and operationally reasonable, required, before considering requirements for the provision of new inland transport infrastructure to deal with remaining transport impacts.”</i>
Paragraph 5.14.12	<p><i>“the Secretary of State may attach requirements to a consent where there is likely to be substantial HGV traffic that:</i></p> <ul style="list-style-type: none"> <li><i>• control numbers of HGV movements to and from the site in a specified period during its construction and possibly on the routing of such movements;</i></li> <li><i>• make sufficient provision for HGV parking, either on the site or at dedicated facilities elsewhere, to avoid ‘overspill’ parking on public roads, prolonged queuing on approach roads and uncontrolled on-street HGV parking in normal operating conditions; and</i></li> <li><i>• ensure satisfactory arrangements for reasonably foreseeable abnormal disruption, in consultation with network providers and the responsible police force.”</i></li> </ul>
<b>National Planning Policy Framework (Ref 12-6)</b>	
Paragraph 106	<i>states that planning policies should “be prepared with the active involvement of local highways authorities, other transport infrastructure providers and operators and neighbouring councils, so that strategies and investments for supporting sustainable transport and development patterns are aligned.”</i>
Paragraph 110	<p><i>“In assessing sites that may be allocated for development in plans, or specific applications for development, it should be ensured that:</i></p> <ul style="list-style-type: none"> <li><i>• appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;</i></li> <li><i>• safe and suitable access to the site can be achieved for all users;</i></li> <li><i>• the design of streets, parking areas, other transport elements and the content of associated standards reflects current national guidance, including the National Design Guide and the National Model Design Code; and</i></li> <li><i>• any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree.”</i></li> </ul>

Policy Reference	Policy Context
<b>National Policy Statements</b>	
Paragraph 108	<i>“Maximum parking standards for residential and non-residential developments should only be set if there is a clear and compelling justification that they are necessary for managing the local road network”.</i>
Paragraph 113	<i>“All developments that will generate significant amounts of movement should be required to provide a travel plan, and the application should be supported by a transport statement or transport assessment so that the likely impacts of the proposal can be assessed.”</i>

### Local Policy

12.2.10 A number of local planning and transport guidelines and policies will be reviewed as part of the EIA, as follows:

- Lincolnshire Local Transport Plan (2013/14 – 2022/23);
- North East Lincolnshire Local Transport Plan (2016-2032); and
- North Lincolnshire Transport Plan (2011-2026).

### Guidance

12.2.11 In addition to the policies and documents above, the following guidance documents have been considered in the production of the chapter. These have provided guidance for the methodology and design basis on which the permanent access road designs have been based:

- Travel Plans, Transport Assessments and Statements – Planning Practice Guidance (Department for Communities and Local Government, March 2014) (Ref 12-7);
- Institute of Environmental Management and Assessment’s (IEA) (formally the Institute of Environmental Assessment (IEA)) ‘Guidelines for the Environmental Assessment of Road Traffic’ – January 1993 (Ref 12-8); and
- Design Manual for Road and Bridges (DMRB)<sup>1</sup> (Ref 12-9).

## 12.3 Scoping Opinion and Consultation

12.3.1 A scoping exercise was undertaken in early 2022 to establish the content of the traffic and transport assessment and the approach and methods to be followed.

12.3.2 The Scoping Report (Ref 12-10) records the findings of the scoping exercise and details the technical guidance, standards, best practice and criteria to be applied in the assessment to identify and evaluate the likely significant effects of the Project on traffic and transport.

<sup>1</sup> Although the DMRB is primarily for use when assessing road schemes, the methodologies it contains are applicable to other types of development and have been successfully implemented over many years. DMRB is therefore often used when there is no alternative sector-specific guidance available.



12.3.3 Following receipt of the Scoping Opinion (*PEIR Volume IV: Appendix 5-2*), the following requirements have been identified by the Planning Inspectorate which will be taken account of as part of the ongoing traffic and transport assessment:

- The Scoping Report states that base traffic flows will be 'growthed' to the identified peak year of construction using adjusted model growth factors. It is not explained how traffic changes in the study area due to other development during the construction period will be accounted for. This should be explained in the ES.
- The Scoping Report describes the use of a gravity model to determine construction worker trip generation and the distribution of construction traffic onto the local highway network to calculate resultant effects. Limited information is provided on the methods applied or likely assumptions to be made as part of these calculations.
- The Inspectorate advises that the duration of effects are defined in the ES in addition to their description as permanent or temporary effects, given the likely extensive timescales of 'temporary' construction effects. If terms such as 'short-term' or 'long-term' are used the duration of these should be defined.
- It will be essential that the key information from the Transport Assessment on which the assessments in the ES rely is clearly described in the ES, and that the assumptions made with regard to the worst-case scenario applied in each case are set out.

12.3.4 Both this PEIR and the ES will be prepared with the comments in mind.

12.3.5 The following matters have been scoped out of the assessment:

- Impacts from operational traffic (including traffic and transport effects, severance, pedestrian delay, pedestrian amenity, fear and intimidation, and accidents and safety)

12.3.6 As noted in the Scoping Opinion the Inspectorate has considered the information provided and accepts that significant effects are unlikely given the likely scale of operational traffic. However, the Inspectorate advises that the ES should include the information used to establish that likely significant effects can be excluded and demonstrate where this has been informed by the outcomes of consultation with stakeholders.

12.3.7 **Table 12-2** below summarises the EIA Scoping Opinion in relation to Traffic and Transport from the Planning Inspectorate including prescribed consultee responses from each local highway authority (LHA).

**Table 12-2: Summary of the EIA Scoping Opinion in relation to Traffic and Transport**

Section Reference to Scoping Opinion	Applicant’s proposed matter	Planning Inspectorate / prescribed consultee comments	Response
Planning Inspectorate Paragraph 14.7.3, Table 14-4	Impacts from operational traffic (including traffic and transport effects, severance, pedestrian delay, pedestrian amenity, fear and intimidation, and accidents and safety)	The Inspectorate has considered the information provided, and accepts that significant effects are unlikely given the likely scale of operational traffic. The Inspectorate advises that the ES should include the information used to establish that likely significant effects can be excluded, and demonstrate where this has been informed by the outcomes of consultation with stakeholders.	This will be provided in the Traffic and Transport ES chapter.
Planning Inspectorate Paragraph 14.4.14	Base traffic flows growth	The Scoping Report states that base traffic flows will be ‘growthed’ to the identified peak year of construction using adjusted model growth factors. It is not explained how traffic changes in the study area due to other development during the construction period will be accounted for. This should be explained in the ES.	For the full assessment at the ES stage, a list of committed developments will be compiled and consulted on with the relevant local highways authorities. Other development occurring during the construction period will be assessed as part of the cumulative effects assessment and reported in the Traffic and Transport ES chapter.
Planning Inspectorate Paragraph 14.2.7, Paragraph 14.4.12	Traffic generation at compounds and construction staff sites	The Scoping Report describes the use of a gravity model to determine construction worker trip generation and the distribution of construction traffic onto the local highway network to calculate resultant effects. Limited information is provided on the methods applied or likely assumptions to be made as part of these calculations. This information should be provided in the ES, and	This will be provided in the Traffic and Transport ES chapter. The distribution for construction workers has been based upon the assumption that they will be centred around the main conurbations of Cleethorpes, Mablethorpe and Louth. The distribution then being based upon the population of that area and the distance to

Section Reference to Scoping Opinion	Applicant's proposed matter	Planning Inspectorate / prescribed consultee comments	Response
		evidence provided demonstrating how the outcomes of consultation with the relevant stakeholders has been taken into account.	the working area. With construction HGVS being distributed towards Immingham.
Planning Inspectorate Paragraph 14.4.11	Duration of effects	The Inspectorate advises that the duration of effects are defined in the ES in addition to their description as permanent or temporary effects, given the likely extensive timescales of 'temporary' construction effects. If terms such as 'short-term' or 'long-term' are used the duration of these should be defined.	The duration of effects is discussed in section 12.4.27.
Planning Inspectorate Paragraph 14.4.15	Transport assessment	It will be essential that the key information from the Transport Assessment on which the assessments in the ES rely is clearly described in the ES, and that the assumptions made with regard to the worst-case scenario applied in each case are set out.	The ability of the highway network to accommodate the development traffic will be assessed and reported in a Transport Assessment (TA) which will form a technical annex to the ES Chapter. For more information refer to section 12.4.15 of this chapter.
East Lindsey District Council	Scope	The ES should assess impacts on travel and congestion on the highway network and impacts on the highway surfaces from increased usage.	This has been preliminarily assessed in section 12.8 and will be fully assessed in the ES.
Lincolnshire County Council	Scope	From a highways perspective, the range of the topics in the scoping document appears reasonable, and we will be able to comment in further detail as the Project progresses.	This response has been noted.
	Scope of TA	I would ask that the applicants scope the Transport Assessment out with ourselves to	The proposed locations of the Automatic Traffic Counts (ATCs) were included in the

Section Reference to Scoping Opinion	Applicant’s proposed matter	Planning Inspectorate / prescribed consultee comments	Response
North East Lincolnshire Council		ensure all committed developments and relevant junctions are included within the report.	Scoping Report and no comments or revisions were made on these. The Applicant will continue to engage with NELC during the full assessment.
	Data collection	In terms of the data collection we ask that this is done during the months of April, May, June, September and October on either a Tuesday, Wednesday or Thursday and during term time.	<p>ATC surveys have been undertaken during July 2022 to provide two-way traffic flows, classified by vehicle type, including HGVs. ATCs have been undertaken on the roads identified in Figure 12 1 between 13 July 2022 and 19 July 2022 to provide one weeks’ worth of data. In line with TAG Unit M1.2 (Ref 12-2) neutral periods are defined as Monday to Thursday from March through to November (excluding August) and avoiding the weeks before / after Easter. The locations and timings of the surveys were agreed with the relevant highway authority – see consultee response section below.</p> <p>Initial ATC locations were selected to provide a basis for a robust baseline for assessment, including local routes within the corridor close to potential sensitive receptors, and routes along key strategic links. The ATC locations (and existing DfT traffic counters) are shown on <b>Figure 12-1</b>.</p>

Section Reference to Scoping Opinion	Applicant's proposed matter	Planning Inspectorate / prescribed consultee comments	Response
North Lincolnshire Council	Assessment Approach	The Council's Highways Officer has confirmed that this proposed approach is acceptable.	This response has been noted.
United Kingdom Health Security Agency	Guidelines	The Traffic Assessment should identify impacts on pedestrians and cyclists including delay, amenity, or safety using the local road network, as outlined within Rules 1 and 2 of the IEA GEART Guidelines. This should include an assessment of usage.	Impacts have been preliminarily identified as outlined within Rules 1 and 2 of the IEA Guidelines (Ref 12-6). This method is explained in section 12.4.1.

## Consultation

12.3.8 The Applicant will continue to engage with the relevant Highways Authorities on the full assessment and provide details in the ES chapter.

## 12.4 Assessment Method

12.4.1 The methodology for assessing the impact of development-generated traffic will be based on that outlined in Institute of Environmental Assessment's (IEA, now known as the Institute of Environmental Management and Assessment (IEMA)) 'Guidelines for the Environmental Assessment of Road Traffic' (January 1993) (Ref 12-6). The IEA guidelines state that a link on the highway network should be included within the study if one of the following 'rules of thumb' is met:

- Rule 1 - Traffic flows increase by more than 30% (or HGV flows increase by more than 30%); or
- Rule 2 - Traffic flows in sensitive areas increase by more than 10%.

12.4.2 Alongside this all routes that have additional traffic on them will be reported on as part of the assessment.

12.4.3 The IEA guidelines recommend that several effects may be considered important when considering traffic from an individual development. This chapter will consider the following effects:

- Severance;
- Pedestrian delay;
- Pedestrian amenity;
- Fear and Intimidation; and
- Accidents and safety.

12.4.4 Although not identified specifically in the IEA guidance, it is also proposed that effects relating to fear and intimidation will be considered.

12.4.5 Other potential traffic related effects are considered under other topics. Temporary noise and vibration effects resulting from construction traffic are considered in *Chapter: 13 Noise and Vibration*. and effects relating to air quality are considered in *Chapter 14: Air Quality*.

12.4.6 The potential effects of construction traffic on sites of ecological and nature conservation value are dealt with in detail in *Chapter 6: Ecology and Biodiversity*. Any traffic effects on tourists, visitor attractions and other businesses, are considered in *Chapter 16: Socio-economics*. The type of traffic which is anticipated to be generated by the Project has been categorised as follows; primarily general traffic, LGVs, HGVs and Abnormal Indivisible Loads (AILs). The vehicle routeing and movement associated with the Project's construction has been considered and will be discussed through ongoing consultation with the relevant Highway's Authorities.

12.4.7 The locations and volumes of the proposed traffic have been quantified to identify those receptors that may be impacted upon, due to the increase in vehicle movements. This has been undertaken by estimating the percentage increase in vehicular activity along the identified construction routes following the collection of traffic data. The Automated Traffic Counts (ATCs) will be used to derive baseline AADT for individual links, subdivided into 24 hour and 18 hour counts for total traffic and HGVs.

12.4.8 Typically, when assessing the impacts of traffic effects, there are a range of particular groups and locations which may be sensitive to changes in traffic conditions compliant with the 'rules of thumb' previously outlined.

12.4.9 These are outlined in the IEA Guidance as 'Affected Parties', as follows:

- People at home;
- People in workplaces;
- Sensitive groups including children, elderly and disabled;
- Sensitive locations, e.g. hospitals, churches, schools, historic buildings;
- People walking;
- People cycling;
- Open spaces, recreational sites, shopping areas;
- Sites of ecological/nature conservation value; and
- Sites of tourist/visitor attraction.

12.4.10 The IEA guidance states that this list of affected parties is not exhaustive. One affected party that is not on the list but will nevertheless be considered in this assessment is 'other road users'. All of the affected parties have one thing in common which is that their potential exposure to changes in traffic volumes comes about through their proximity to a construction traffic route.

12.4.11 It is important to note that the IEA methodology does not consider the duration of effect, especially whether it is temporary (construction only) or permanent (operational traffic). As such effects that, using this methodology, may appear to be significant, may be considered not significant if the effect is temporary or infrequent (occurring only occasionally during construction).

12.4.12 To calculate the trip distribution of workers travelling to and from the proposed construction compounds each day, a simple gravity model has been developed based on likely origin/destinations. Construction traffic associated with the Project will be distributed onto the local highway network to calculate the resultant percentage increase on each link.

12.4.13 Assessments will be undertaken at the peak of construction for each of the identified scenarios, based on the proposed programme this will cover only one year (which provides the most robust assessment) as the peak year for traffic volumes can vary along various routes depending on which section of the Project they serve.

12.4.14 Growth factors derived from TEMPro v7.2 with MSOA area adjusted for relevant areas impacted by the Project. Meanwhile, the peak construction traffic flows will be derived by analysing construction traffic data and construction programmes provided by Design Engineers.

### Transport Assessment

12.4.15 The ability of the highway network to accommodate the development traffic will be assessed and reported in a Transport Assessment (TA) which will form a technical annex to the ES Chapter. The TA will include information on:

- A review of relevant national, regional and local policies;
- Description of the existing baseline conditions - a thorough description of the roads, railway lines, footpaths, bridleways and cycle paths crossed by the route. Traffic flows

on these routes and levels of use on bridleways, footpaths and cycle paths will be measured through site observations and agreed with the relevant planning authority;

- A review of the road safety data for the most recent five-year period within the identified search cordon;
- Description of the Project setting out timescales for construction, identification of route sections, typical working width layout, compound locations, access routes to compounds, construction methods for individual railway and road crossings;
- Traffic generation of compounds and any other relevant sites for construction staff with a profile of arrivals and departures for the day and HGV traffic with a profile of arrivals and departures for the day;
- Distribution and assignment of trips to the network with construction traffic distributed based on a gravity model of worker catchment area and HGV's assigned from the A road network;
- Mitigation measures; and
- Summary and conclusions.

### Sensitivity, Value or Importance

12.4.16 The general criteria for defining the importance or sensitivity of receptors are set out in **Table 12-3**. Key factors influencing this include:

- The value of the receptor or resource based upon empirical and/or intrinsic factors, for example considering any legal or policy protection afforded which is indicative of the receptor or resources' value internationally, nationally or locally; and
- The sensitivity of the receptor or resource to change, for example is the receptor likely to acclimatise to the change. This will consider legal and policy thresholds which are indicative of the ability of the resource to absorb change.

**Table 12-3: Categorising the Overall Sensitivity of a Highway Link**

Sensitivity	Description
High	Schools, colleges, playgrounds, hospitals, retirement homes. Heavily congested junctions, residential properties very close to carriageway.
Medium	Congested junctions, shops/businesses, areas of heavy pedestrian / cycling use, areas of ecological/nature conservation, residential properties close to carriageway.
Low	Tourist/visitor sites, places of worship, residential areas set back from the highway with screening.
Very Low	Those people and places located away from the affected highway link.

12.4.17 The link sensitivity has been based upon an average sensitivity of the whole link, and some links have then been broken down into sensible sections where appropriate, e.g. between two main junctions or villages.



## Magnitude

- 12.4.18 This assessment will consider a range of potential effects that could be experienced during the construction stage of the Project and this section identifies how magnitude will be considered for each.
- 12.4.19 Severance is considered here in the context of driver severance, when there is difficulty accessing onto a heavily trafficked road. The assessment will consider both total traffic and the proportion of HGVs. The guidance for thresholds of magnitude is taken from DMRB Volume 11, Section 3, Part 8.
- 12.4.20 Pedestrian Delay occurs when there is difficulty crossing a heavily trafficked road. Effects are only likely to be realised when the total two-way traffic on the carriageway exceeds 1,400 vehicles per hour (IEA Guidelines).
- 12.4.21 Pedestrian Amenity is similar to Pedestrian Delay in that there needs to be a fairly significant proportional increase in traffic for baseline effects to be considerably worsened. The IEA guidelines suggest that traffic needs to double for effects to become significant. This assessment acknowledges that lower proportional increases may have minor or moderate impacts.
- 12.4.22 Fear and Intimidation occurs through a combination of traffic flow, speed, proportion of HGVs and the proximity of the above to people or receptors on highway links. These indicators are often heightened by a perceived lack of protection or buffers from the highway or through narrow or non-existent footways. The full EIA will consider each road on a case by case basis, however there are indicative thresholds provided in the IEA guidelines which are presented in **Table 12-4**.
- 12.4.23 Driver Delay is an effect cited in the IEA guidance and relates to incremental increases in traffic (as outlined in **Table 12-4**). As a further consideration, where any temporary road closures or traffic management is likely to be in place to enable the construction of the Proposed Development, any additional delay caused because of following diversion routes will be reported as necessary based on the guidelines.
- 12.4.24 Highway safety considers PIA data obtained from the LHA for the last five years at junctions and links along the proposed construction traffic routes. These have been used to assess whether the additional traffic during construction of the Proposed Development would be likely to have a detrimental effect of road safety.
- 12.4.25 PRowS are assessed in a similar fashion to Driver Delay. Increases to traffic flows where PRowS intersect with highway links are considered on a percentage increase basis. However, where PRowS are diverted or closed in part these are considered on the basis of how long disruption to the existing route would occur for.
- 12.4.26 **Table 12-4** summarises the criteria used to determine whether magnitude is considered Very Low, Low, Medium or High. Within this table, neither the sensitivity of receptors, nor the duration of effects, is taken into consideration. This table is formed using IEA Guidelines, DMRB and professional judgement.

**Table 12-4: ES Magnitude Criteria**

Impact	Very Low	Low	Medium	High
Severance	Increase in total traffic flows of 29% or under (or increase in	Increase in total traffic flows of 30-59% (or increase in HGV flows of	Increase in total traffic flows of 60%-89% (or increase in HGV	Increase in total traffic flows or HGV flows of 90% and above.

Impact	Very Low	Low	Medium	High
	HGV flows under 10%).	between 20%-39%.	flows between 40%-89%.	
Pedestrian Delay	Total traffic flows under 1,400 per hour.	Where traffic flows exceed 1,400 vehicles per hour the severity of the impact will be determined on a case-by-case basis based on receptor sensitivity.		
Pedestrian Amenity	Increase in total traffic flows of 49% or under.	Increase in total traffic flows of 50-69%.	Increase in total traffic flows of 70%-99%.	Increase in total traffic flows of 100% or above.
Fear and Intimidation	Increase in total traffic flows or HGV flows of 29% or under (or increase in HGV flows under 10%).	Increase in total traffic flows of 30-59% (or increase in HGV flows of between 10%-39%.	Increase in total traffic flows of 60%-89% (or increase in HGV flows between 40%-89%)	Increase in total traffic flows or HGV flows of 90% and above.
Driver Delay	Increase in total traffic flow of less than 29%.	Increase in total traffic flow of between 30% and 59%.	Increase in total traffic flow of between 60% and 89%.	Increase in traffic flow of 90% and above.
Highway Safety	Increase in total traffic flows of 30% or under (or increase in HGV flows under 10%).	All links estimated to experience increases in total traffic flows above 30% or increases in HGV flows above 10% are analysed further on a case by case basis.		
PRoW	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. <u>Or</u> Where there would be a temporary increase in pedestrian journey length along a road or	Increase in total traffic flows of 30-59% (or increase in HGV flows of between 10%-39% on a link intersecting a PRoW. <u>Or</u> Where there would be a temporary increase in pedestrian journey length along a road or other PRoW of one to four weeks due to short term closure	Increase in total traffic flows of 60%-89% (or increase in HGV flows between 40%-89%) on a link intersecting a PRoW <u>Or</u> Where there would be a temporary increase in pedestrian journey length along a road or other PRoW for more than four weeks due to short term closure	Increase in total traffic flows or HGV flows of 90% and above on a link intersecting a PRoW. <u>Or</u> Where there would be a short term closure of the PRoW without a diversion route for more than four weeks in any 12 month period

Impact	Very Low	Low	Medium	High
	other PRow of one to five days due to short term closure (managed) of the PRow	(managed) of the PRow	(managed) of the PRow	

### Duration

12.4.27 **Table 12-4** above sets out the proposed magnitude thresholds for the respective environmental effects to be considered. Except for PRow effects, all effects have a magnitude that does not, initially, consider the duration over which an effect is likely to be experienced.

12.4.28 Duration is considered when assessing the overall significance of residual effects, noting that the DMRB Volume 11 Section 2 Part 5 states in Paragraph 1.47:

*‘Recognition should be made that permanent impacts will be more significant than those of a temporary nature. For example, the impact may only occur during a single phase of the project construction and may be temporary. Alternatively, the impact may be long-term or irreversible and hence permanent. It is, therefore, important that the assessment distinguishes between permanent and temporary impacts’.*

12.4.29 The traffic and transport effects associated with the Proposed Development would be temporary effects. Some temporary effects would be likely to last longer than others, and have been reported within the preliminary assessment of effects section below. Following the quantified assessment, residual effects will be reported, considering professional judgement on the duration over which effects are likely to be experienced.

### Significance

12.4.30 Effects will be considered significant or not significant in EIA terms by judging the relationship between the magnitude of effect of each assessment criteria to be assessed, with the sensitivity of each receptor. A Major or Moderate effect is typically considered to be significant. A Minor or Negligible effect is not considered significant. **Table 12-5** presents a matrix that will be used to help determine the significance of effects.

**Table 12-5: Significance of Effects Matrix**

Sensitivity of receptor	Magnitude			
	High	Medium	Low	Very Low
High	Major– Significant	Major– Significant	Moderate– Significant	Minor– Not Significant
Medium	Major– Significant	Moderate– Significant	Minor– Not Significant	Negligible – Not Significant
Low	Moderate– Significant	Minor– Not Significant	Negligible – Not Significant	Negligible – Not Significant
Very Low	Minor– Not Significant	Negligible – Not Significant	Negligible – Not Significant	Negligible – Not Significant

12.4.31 As well as considering the duration that effects are likely to be experienced over, other factors will be taken into consideration when determining the significance of effects, such as any contingency route designations, and the specific nature of the receptor itself.

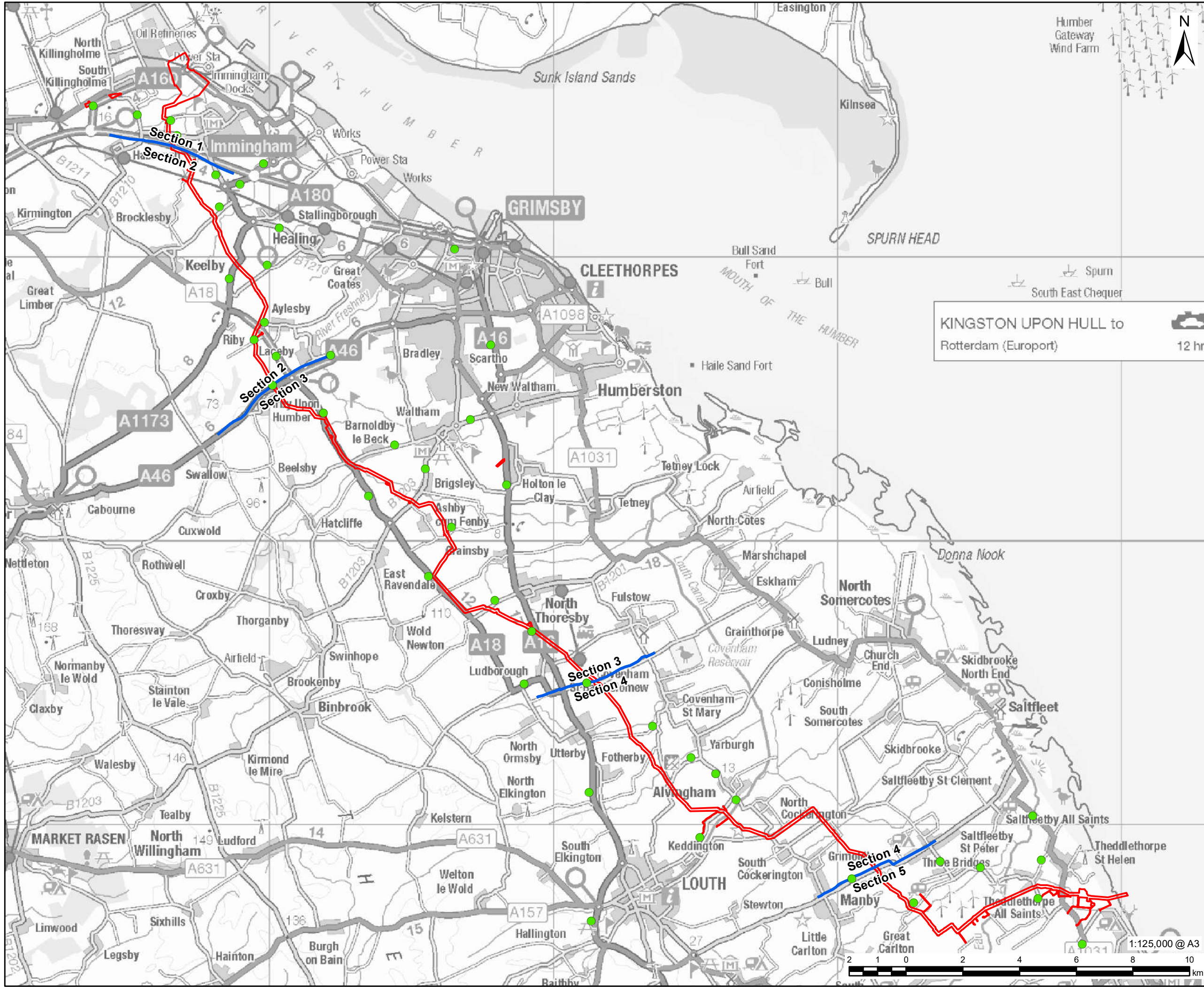
## 12.5 Baseline Environment and Study Area

12.5.1 Baseline highway conditions are presented below across each of the five sections, with the analysis broken down into the following sub-sections:

- Surrounding Highway Network;
- Surrounding Public Rights of Way (PRoW) and National Cycle Network (NCN);
- Baseline Traffic Flows; and
- Personal Injury Collision (PIC) Analysis.

### Study Area

12.5.2 The traffic and transport study area will include the anticipated construction routes serving the Project. Automated Traffic Counts (ATC) have been undertaken on each of these routes, which are shown on **Figure 12-1**.



PROJECT  
**Viking CCS Pipeline**

- LEGEND
- Draft Order Limits
  - Route Section Break
  - ATC Location

KINGSTON UPON HULL to  
Rotterdam (Europort)  
12 hrs

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FIGURE TITLE  
**Figure 12-1  
ATC Locations**

ISSUE PURPOSE  
PEIR  
PROJECT NUMBER / REFERENCE  
60668955 / VCCS\_221102\_PEIR\_12-1

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12.5.3 As a minimum, it is anticipated that the following strategic/primary links will likely be used by construction vehicles to access the Project:

- A160;
- A180;
- A18;
- A46;
- A16;
- B1200; and
- A1031.

12.5.4 Alongside these, a variety of smaller routes will also be included for assessment purposes to account for proposed routing to the spread.

### Surveys Undertaken

12.5.5 ATCs have been undertaken during a neutral month during 2022 to provide two-way traffic flows, classified by vehicle type, including HGVs. ATCs have been undertaken on the roads identified in **Figure 12-1** between 13 July 2022 and 19 July 2022 to provide one weeks' worth of data. In line with TAG Unit M1.2 (Ref 12-2) neutral periods are defined as Monday to Thursday from March through to November (excluding August) and avoiding the weeks before / after Easter. The locations and timings of the surveys were agreed with the relevant highway authority – see consultee response section above.

12.5.6 Initial ATC locations were selected to provide a basis for a robust baseline for assessment, including local routes within the corridor close to potential sensitive receptors, and routes along key strategic links. The ATC locations are shown on **Figure 12-1**.

### Summary of Data Sources

12.5.7 This section describes the main data sources from which information has been obtained to inform the traffic and transportation baseline and subsequent assessment of environmental effects. The main data considered fundamental to the assessment of traffic and transport effects is traffic flow data and Personal Injury Accident (PIA) data.

12.5.8 The PIA data has been obtained from the relevant highway authority for the most recent five-year period which will provide information on each collision including severity as well as the factors which attributed to the collision.

12.5.9 Average Annual Daily Traffic (AADT) flows have been derived from the ATC data. Traffic generation at compounds and other sites for construction staff has been obtained with a profile of daily Light Goods Vehicle (LGV) and Heavy Goods Vehicle (HGV) arrivals and departures across the construction period.

12.5.10 A review of the planning portal has also been undertaken to identify planning applications that may include representative traffic data collected prior to the COVID-19 pandemic.

12.5.11 Data obtained from the DfT and Webtris for the most recent, pre-COVID, period available (2018 or 2019 dependant on the quality of the data), provides estimated AADTs for roads across the UK which are classified by vehicle type (pedal cycles, two wheeled motor vehicles, cars and taxis, buses and coaches, LGV as well as HGV). However, the data limitations of such counters are acknowledged as not all counters provide data for the full week, month or year.

12.5.12 The next section provides detail on the baseline conditions related to each of the route sections characterised by the surrounding highway network, PRow/NCN, baseline traffic data and accident overview.

## **Section 1**

### ***Surrounding Highway Network***

12.5.13 **Figure 12-2** below provides an overview of the highway network across Section 1.

12.5.14 The key road links identified across Section 1 are:

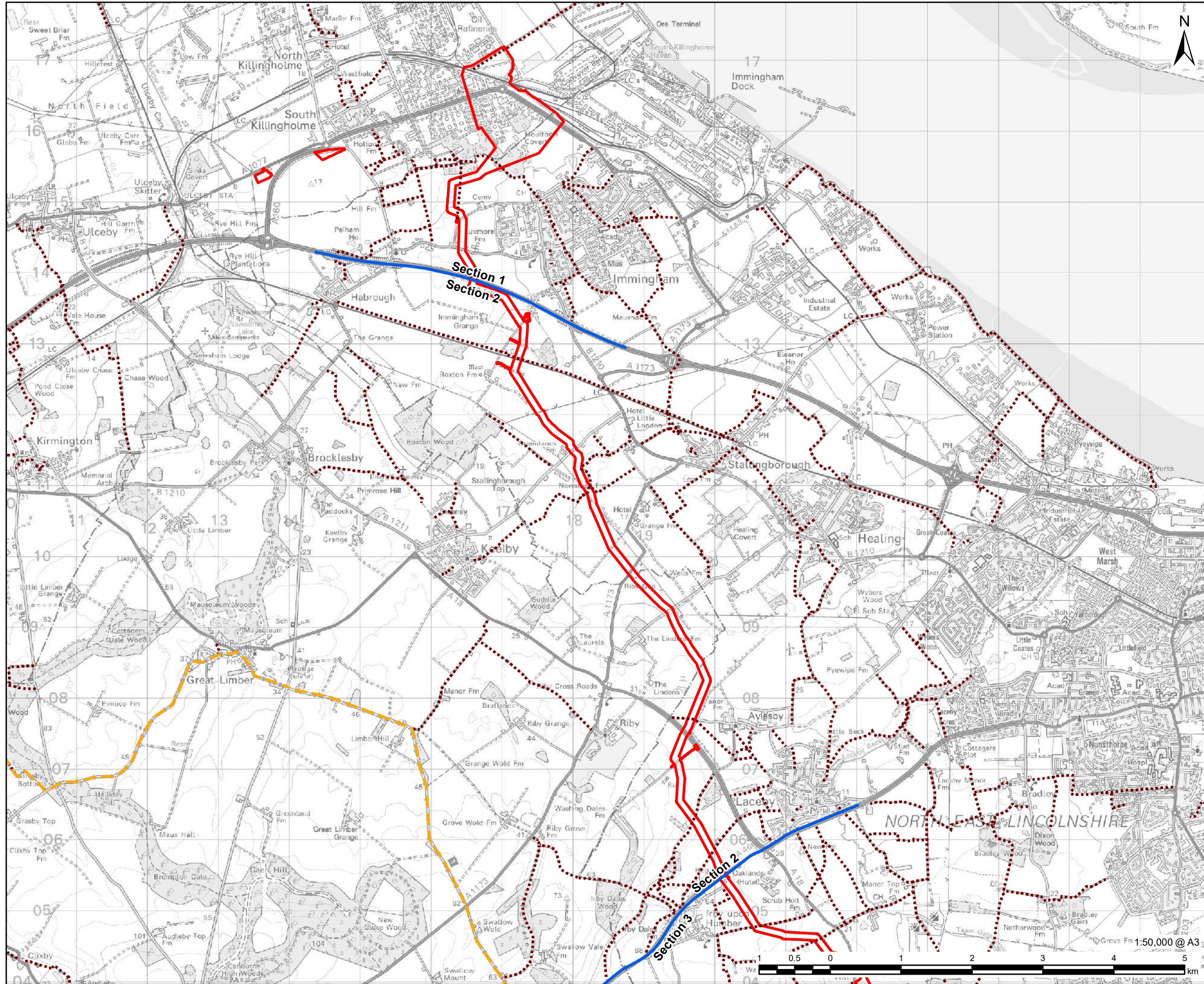
- A1173; and
- A160.

12.5.15 The A1173 Manby Road is a continuation of the A160 providing a link into Immingham. It is of dual carriageway standard.

12.5.16 The A160 is again a dual carriageway and heads west from the A1173 and connects to the A180. This is part of the strategic road network and is maintained by National Highways and provides the main route to the wider highway network.

### ***PRow/NCN Network***

12.5.17 The next section describes the PRow/NCN network within Section 1 which is shown on **Figure 12-2**.



LEGEND

- Draft Order Limits
- Route Section Break
- National Cycle Route
- Public Right of Way

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Provisional data shown for North East Lincolnshire while awaiting definitive datasets.

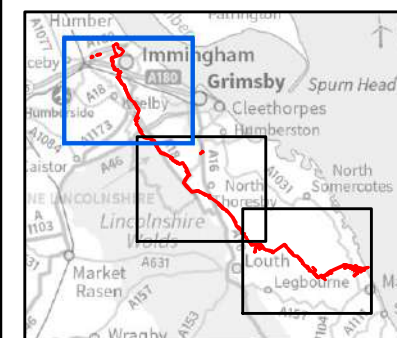
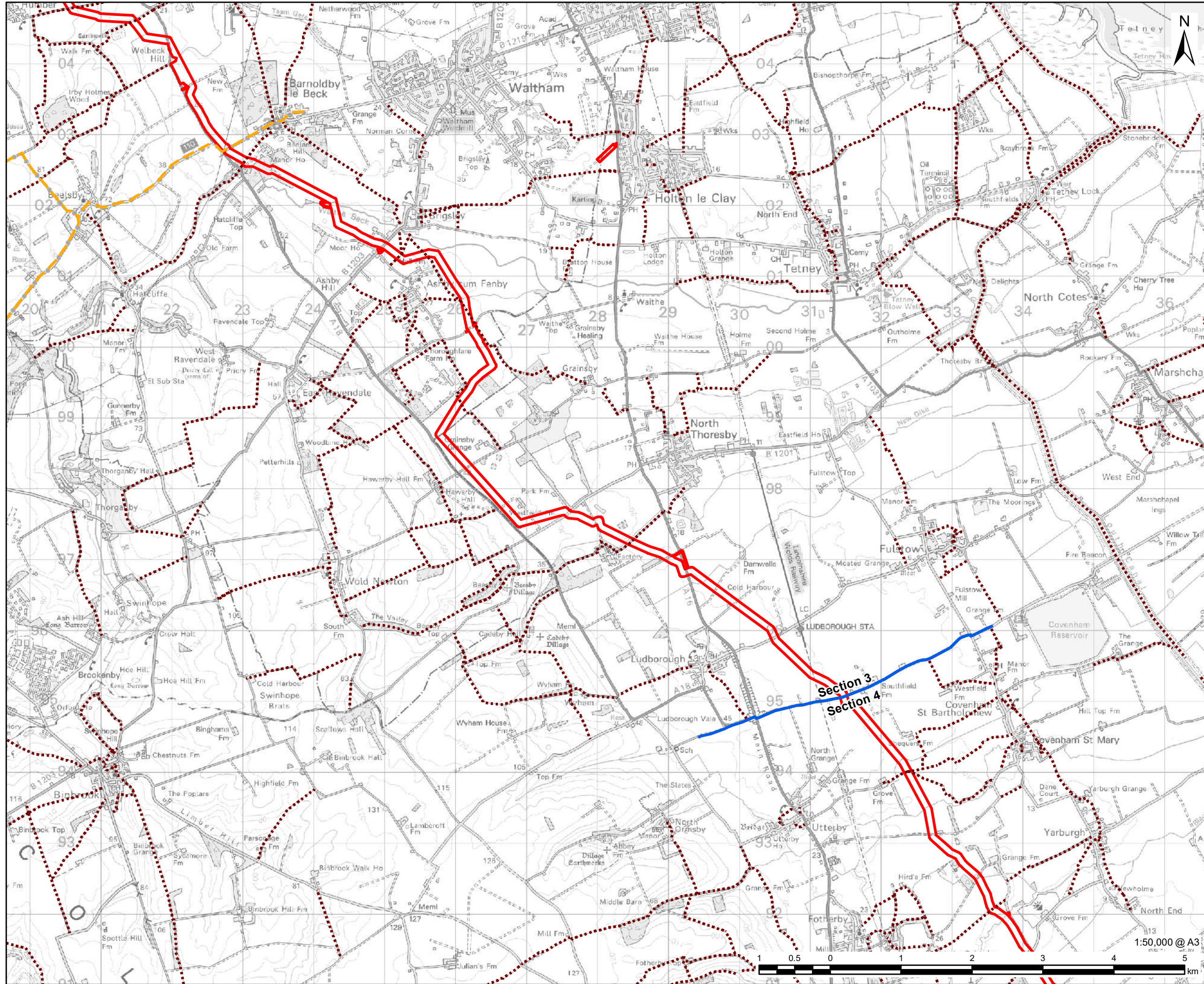


FIGURE TITLE

**Figure 12-2 (1 of 3)  
Public Rights of Way and National Cycle Network**

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LEGEND

- Draft Order Limits
- Route Section Break
- National Cycle Route
- Public Right of Way

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Provisional data shown for North East Lincolnshire while awaiting definitive datasets.

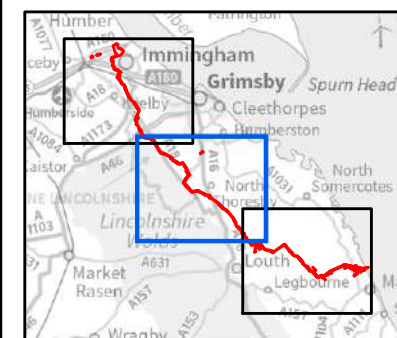
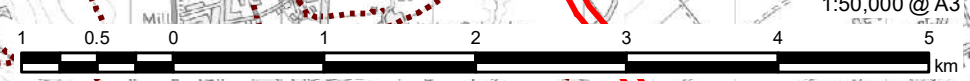


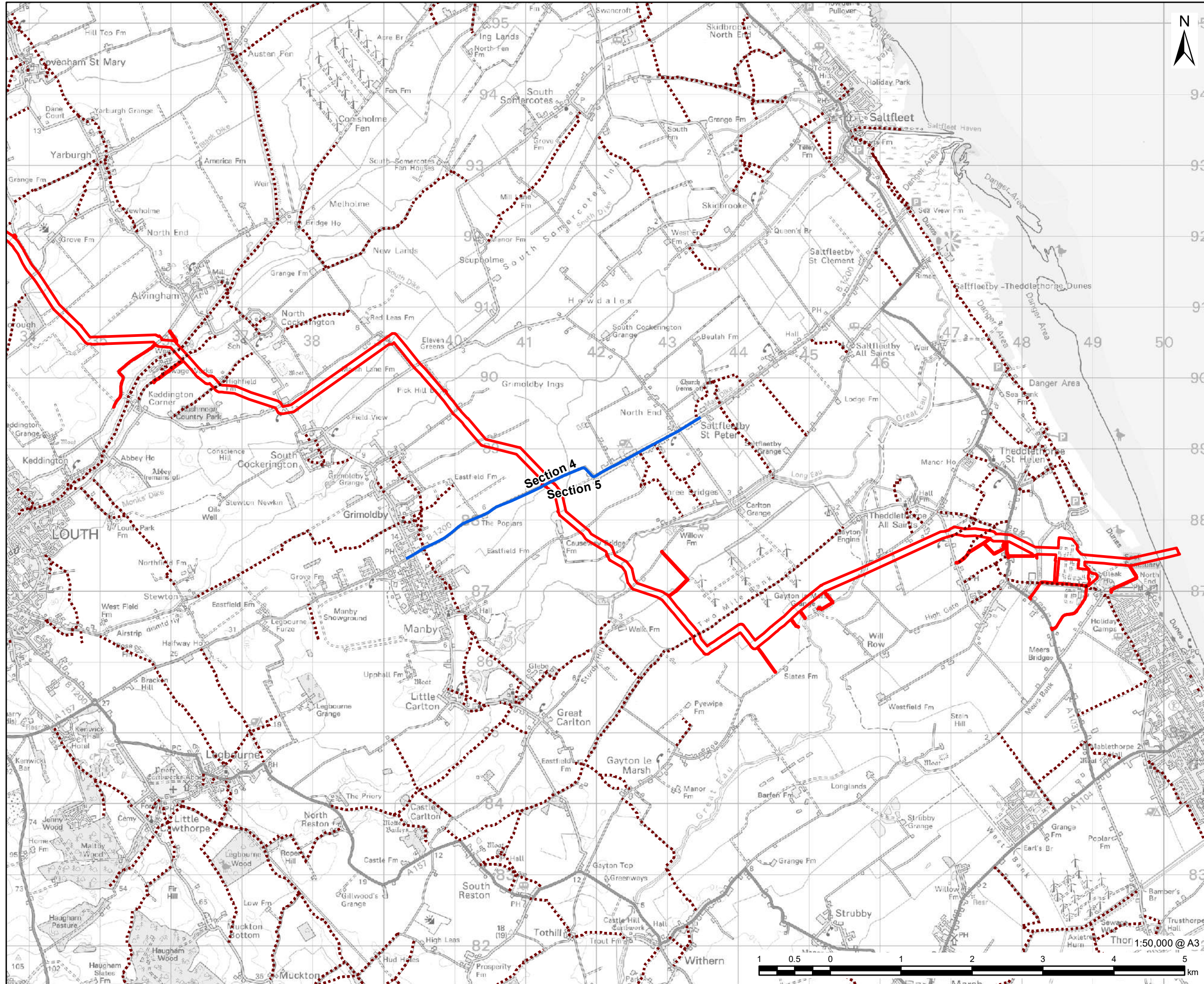
FIGURE TITLE

**Figure 12-2 (2 of 3)**

**Public Rights of Way and National Cycle Network**

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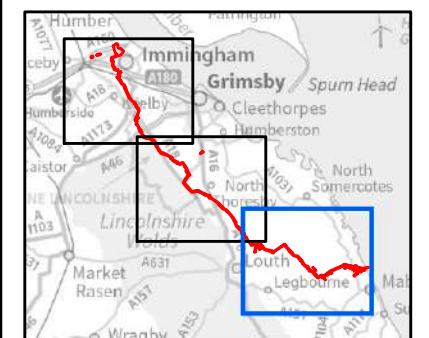


**LEGEND**

- Draft Order Limits
- Route Section Break
- Public Right of Way

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Provisional data shown for North East Lincolnshire while awaiting definitive datasets.



**FIGURE TITLE**  
**Figure 12-2 (3 of 3)**  
**Public Rights of Way and National Cycle Network**

**ISSUE PURPOSE**  
 PEIR  
**PROJECT NUMBER / REFERENCE**  
 60668955 / VCCS\_221108\_PEIR\_12-3

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12.5.18 As can be seen in **Figure 12-2** there are several PRowS that run within Section 1 however only 2 routes directly passthrough the route corridor (Route 11 and 20). Route 20 runs northwest of Immingham towards the route corridor whilst route 11 route runs south from South Killingholme. One PRow (route 5) does pass over the A180, however this is in the form of a footbridge with no disruption anticipated. Temporary stopping up orders may need to be put in place prior to the commencement of the Project. In terms of NCN there are no routes within this area, as such no disruption to the NCN is anticipated.

**Baseline Traffic**

12.5.19 The ATC data has been used to derive the 24 hour AADT and the 18 hour AADT for individual links for total traffic and HGVs within Section 1 provided in **Table 12-6** and **Table 12-7**.

**Table 12-6: Section 1 24hr AADT Baseline Traffic**

Road Name	ID	All Vehicles (Two-Way)	HGVs (Two-Way)	%HGVs
Habrough Road	41	4054	308	7.6%
A1173	42	7027	1846	26.3%
Mill Lane	43	102	3	2.9%
A160 (HGV %ge taken from DfT AADT data)	44	12990	5241	40.3%
Killingholme Road	45	4109	372	9.1%

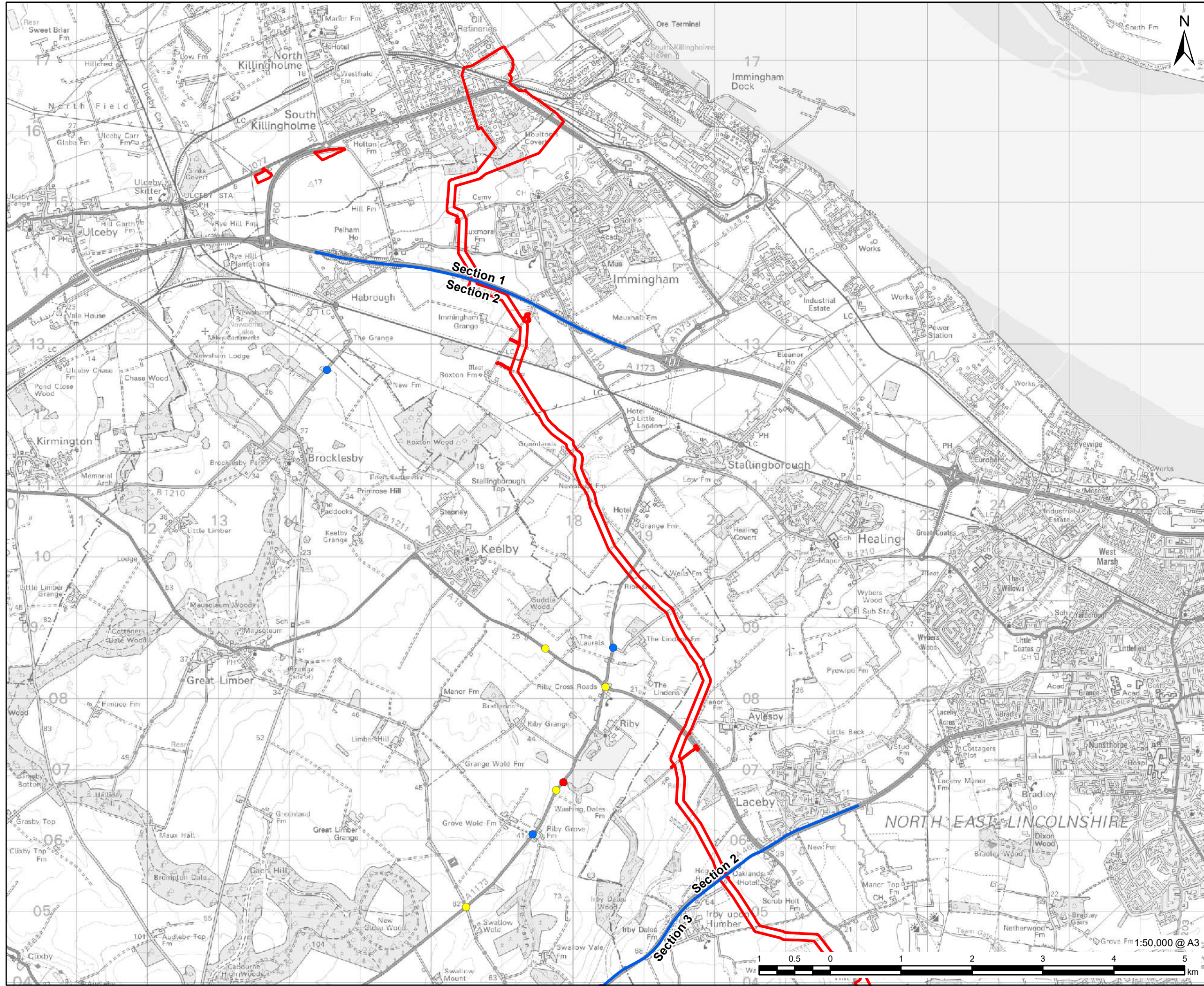
**Table 12-7: Section 1 18Hr AADT Baseline Traffic**

Road Name	ID	All Vehicles (Two-Way)	HGVs (Two-Way)	%HGVs
Habrough Road	41	3907	297	7.6%
A1173	42	6362	1722	27.1%
Mill Lane	43	99	3	3.0%
A160 (HGV %ge taken from DfT AADT data)	44	11605	4682	40.3%
Killingholme Road	45	3884	353	9.1%

12.5.20 It can be seen in **Table 12-6** and **Table 12-7** that Harborough Road, Killingholme Road and the A1173 have relatively high levels of HGV's, which is to be expected given the industrial nature of the local area. The A160 ATC was conducted using radar and, as such, no specific HGV value can be estimated from this data. However, this has then been supplemented by AADT data which indicates an HGV percentage of 40.3%.

**Road Safety Analysis**

12.5.21 To ensure that there are no underlying highway safety issues across Section 1, personal injury collision (PIC) data have been analysed and are shown on **Figure 12-3**.



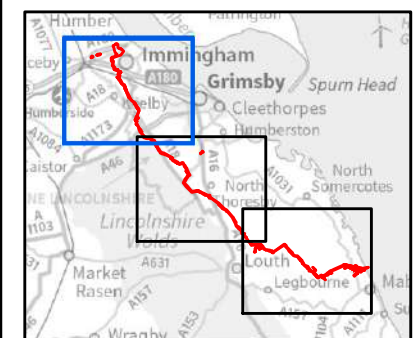
**LEGEND**

- Draft Order Limits
- Route Section Break

**Accident Location**

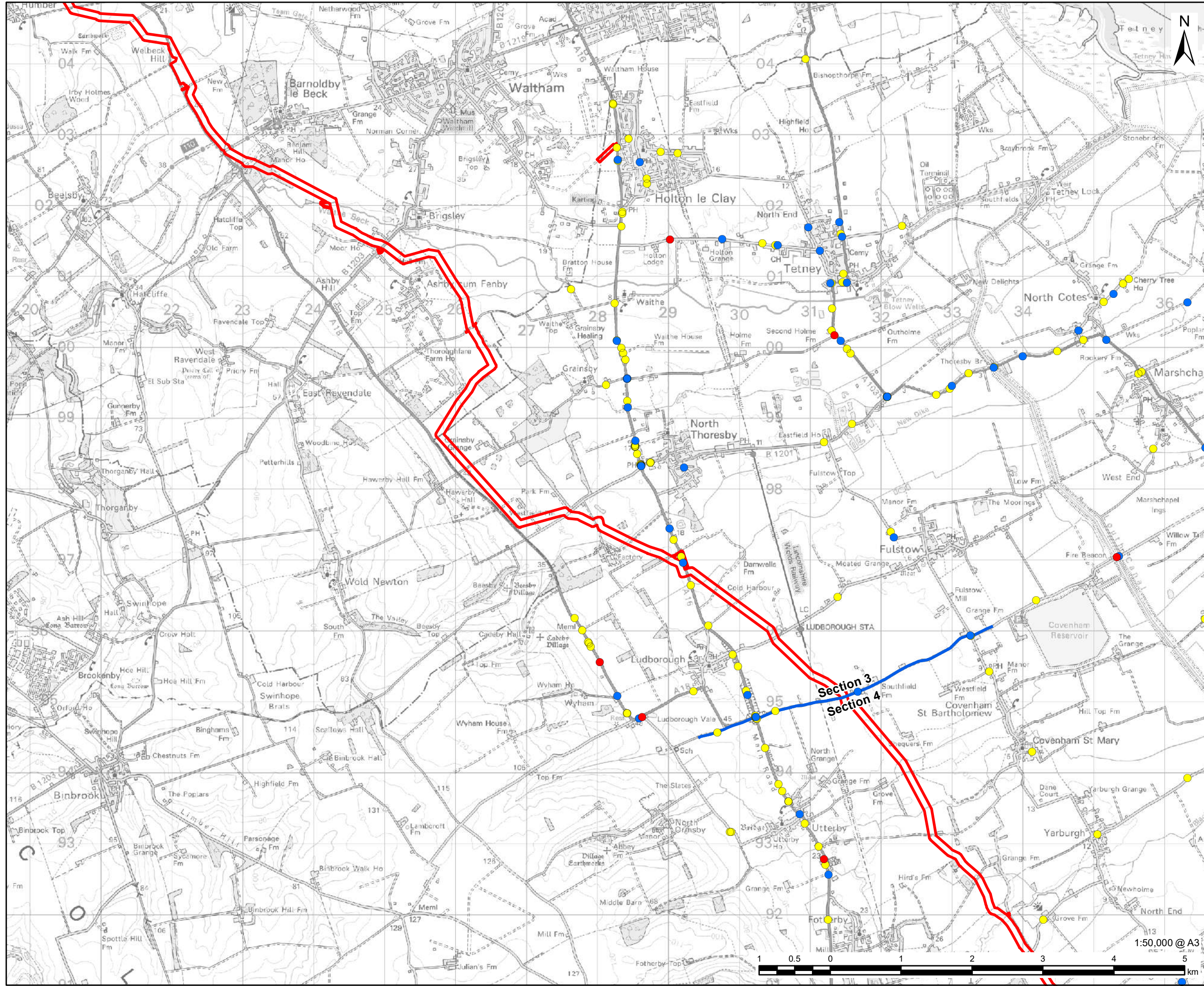
- Slight
- Serious
- Fatal

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**FIGURE TITLE**  
 Figure 12-3 (1 of 3)  
 Accident Locations

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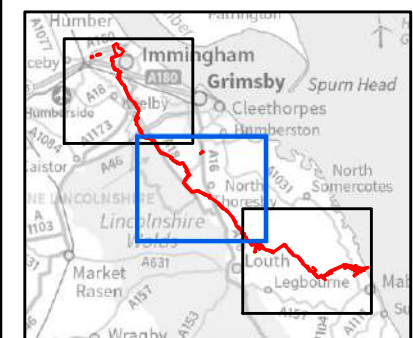
**LEGEND**

- Draft Order Limits
- Route Section Break

**Accident Location**

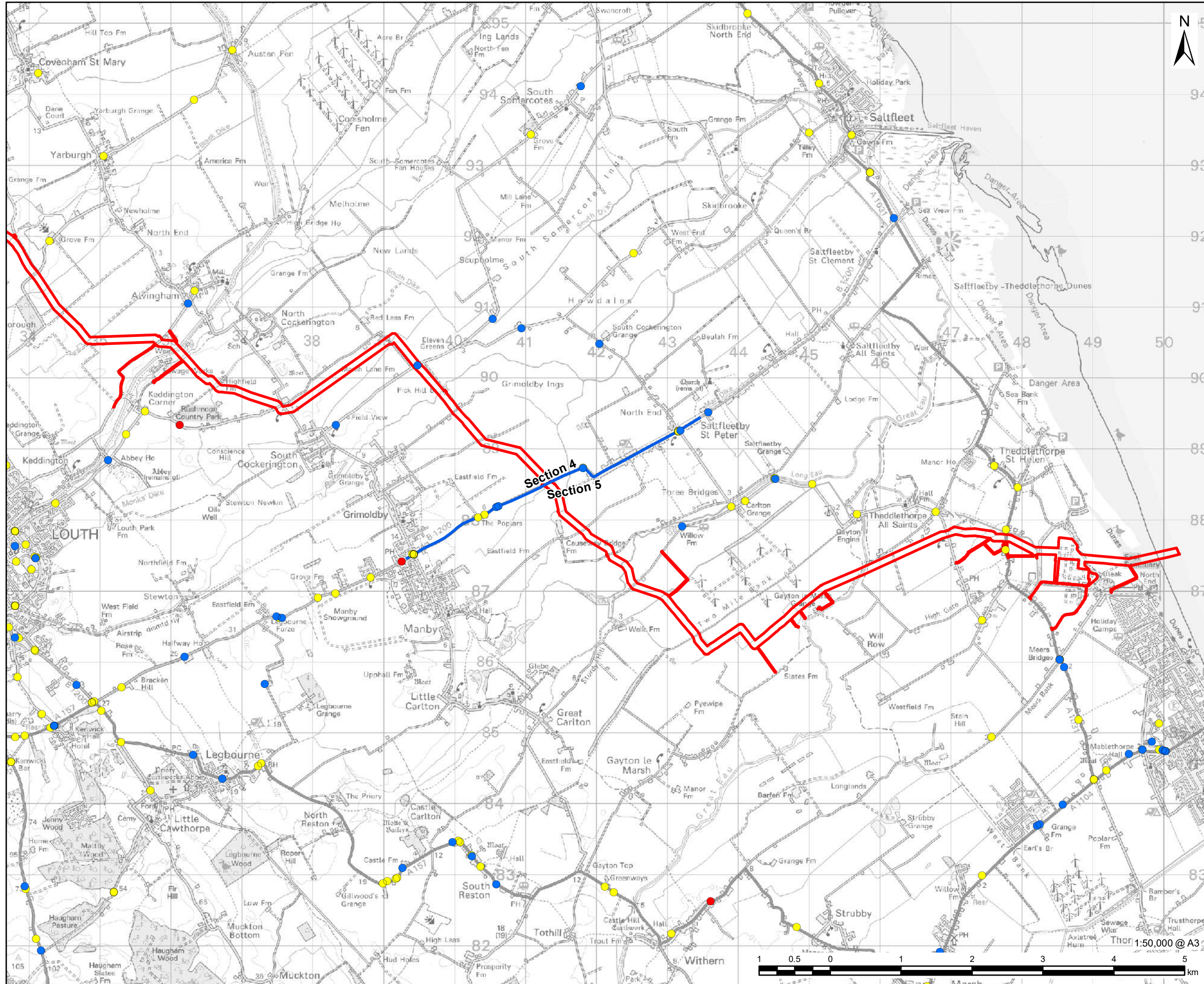
- Slight
- Serious
- Fatal

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**FIGURE TITLE**  
 Figure 12-3 (2 of 3)  
 Accident Locations

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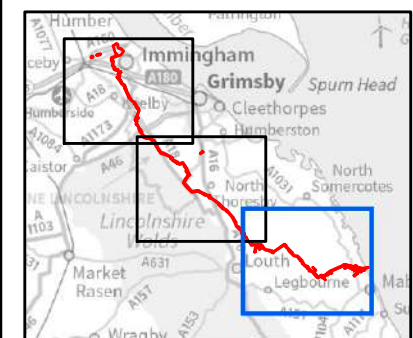
**LEGEND**

- Draft Order Limits
- Route Section Break

**Accident Location**

- Slight
- Serious
- Fatal

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**FIGURE TITLE**

**Figure 12-3 (3 of 3)**

**Accident Locations**

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12.5.22 Section 1 is contained within the authoritative boundary of North East Lincolnshire and therefore PIC data have been requested to cover the most recent five-year period. It is noted the information produced in this section is different to the remaining sections due to the information that was provided from NELC in which the primary factor has not been included as such this has not been included within this section.

12.5.23 To ensure that there are no underlying highway safety issues across Section 1, personal PIC data has been analysed and is presented in **Figure 12-3** which outlines the section breaks.

**Table 12-8: Section 1 Accident Overview by Year**

Year	Slight	Serious	Fatal	Total
2017	6	4	0	10
2018	8	6	0	14
2019	10	2	0	12
2020	7	8	0	15
2021	14	0	0	14
Total	45	20	0	65

12.5.24 As shown in **Table 12-8** above a combined total of 65 collisions have been recorded across the highway network within Section 1, 45 of which were classed as slight in severity and 21 serious collisions.

12.5.25 This has been further analysed based on the number of accidents on each particular link as supplied by the LHA.

**Table 12-9: Section 1 Accident Overview by Link**

Link	Slight	Serious	Fatal	Total
A180	23	6	0	29
Habrough Road	1	2	0	3
Pelham Road	16	7	0	23
A1173	3	2	0	5
Manby Road	2	2	0	4
Stallingborough Road	0	1	0	1
Total	45	20	0	65

12.5.26 As shown in **Table 12-9** above the A180 had a total of 29 collisions, 23 slight collisions and 6 serious, Pelham Road had a total of 23 collisions, 16 classed as slight and 7 serious. The A1173 had a total of 5 recorded collisions including 3 slight collisions and 2 serious collisions. Maby Road had a total of 4 recorded collisions split 50/50 in terms of slight and serious with 3 collisions on Habrough Road and 1 on Stallingborough.

### ***Fatal collisions***

12.5.27 There were no recorded collisions within this section.

### **Section 2**

12.5.28 The next section provides an overview of the baseline conditions within Section 2.

### ***Surrounding Highway Network***

12.5.29 **Figure 12-1** provides an overview of the highway network across Section 2.

12.5.30 The key road links identified across Section 2 are identified below:

- A1173;
- B1210;
- Wells Road; and
- A18.

12.5.31 The A1173 is a Primary Route that runs from the A46 road in Caistor to the A160 in Immingham. The A1173 also provides access to the A180 via a large unsignalised junction. The A1173 is rural in nature and is single carriageway with the national speed limit applied.

12.5.32 The B120 runs east to west through through Habrough and crossing the A180 without a junction, after which it runs parallel to that road into Immingham. The B1210 further extends along the former line of the A1136 southeast from Immingham. It meets the end of the southern half of the A1173 in Stallingborough before continuing to Great Coates where it joins the A1136.

12.5.33 Wells Road runs on a northeast to southeast alignment between the A1173 and Stallingborough Road near Healing. Wells Road is rural in nature and is single carriageway with the national speed limit applied. There is 7.5t weight restriction in place along Wells Road.

12.5.34 A full route review outlining the HGV restrictions will be performed prior to full submission as the route may need to be tailored to each specific type of vehicle movement. The relevant LHA will be contacted to provide an overview of the restrictions within each route section.

12.5.35 The A18 is a primary route that runs east to west linking Doncaster to Ludborough via Scunthorpe and Grimsby. The A1173 is rural in nature and is single carriageway with the national speed limit applied. The A180 now supersedes this route as the main east west through this part of the area.

### ***PRoW/NCN Network***

12.5.36 **Figure 12-2** provides an overview of the PRoW/NCN across Section 2.

12.5.37 As can be seen in Figure 12-2 there are several PRoW that run within Section 2. These include a PRoW to the north of the Section between Kealby and towards Stallingborough (route 26), there are also a number of PRoW that intersect the route corridor towards Laceby including route 116 near Aylesby, and route 119 near Laceby. Temporary stopping up orders may need to be put in place prior to the commencement of the Project.

12.5.38 In terms of NCN there are no routes within this area, as such no disruption to the NCN is anticipated.



**Baseline Traffic Flows**

12.5.20 The ATC data have been used to derive 24 hour AADT, 18 hour AADT and 18 hour AAWT for individual links for total traffic and HGVs within Section 2.

**Table 12-10: Section 2 24Hr AADT**

Road Name	ID	All Vehicles (Two-Way)	HGVs (Two-Way)	%HGVs
B1210	1	9198	602	6.5%
A1173	2	5755	631	11.0%
Keelby Road	3	2146	122	5.7%
Healing Road	4	5546	443	8.0%
Wells Road	5	812	92	11.3%
A46	14	7229	817	11.3%
A46 - Grimsby Road	15	14885	1449	9.7%
Unnamed off A18	16	111	5	4.5%
Nooking Lane	17	1347	127	9.4%
A1173	18	3292	531	16.1%
A18 - Barton Street North	19	12318	1744	14.2%
A180 – Westgate (HGV %ge taken from AADT data)	49	28737	1363	5.0%

**Table 12-11: Section 2 18Hr AADT**

Road Name	ID	All Vehicles (Two-Way)	HGVs (Two-Way)	%HGVs
B1210	1	8862	579	6.5%
A1173	2	5488	600	10.9%
Keelby Road	3	2096	120	5.7%
Healing Road	4	5394	431	8.0%
Wells Road	5	792	90	11.4%
A46	14	7013	777	11.1%
A46 - Grimsby Road	15	14482	1392	9.6%
Unnamed road off A18	16	104	5	4.8%
Nooking Lane	17	1300	125	9.6%
A1173	18	3169	510	16.1%
A18 - Barton Street North	19	11881	1663	14.0%
A180 – Westgate (HGV %ge taken from AADT data)	49	26655	1265	5.0%

12.5.39 As can be seen **Table 12-10** and **Table 12-11** the majority of links within the surveyed section are heavily trafficked by HGVs with the exception of the unnamed link off the A18 and Wells Road which has both limited daily vehicle movements and HGV traffic.

12.5.40 The A180 ATC was conducted using radar as such no specific HGV value can be estimated from this data. However, this has then been supplemented by AADT data which indicates an HGV percentage of 5%.

**Road Safety Analysis**

12.5.41 To ensure that there are no underlying highway safety issues across Section 2, personal PIC data has been analysed and is presented in **Figure 12-3** which outlines the section breaks.

**Table 12-12: Section 2 Accident Overview by Year**

Year	Slight	Serious	Fatal	Total
2017	2	2	1	5
2018	2	2	0	4
2019	0	1	0	1
2020	4	1	0	5
2021	2	2	0	4
Total	10	8	1	19

12.5.42 As shown in **Table 12-12** above a combined total of 18 collision’s have been recorded across the highway network within Section 2, 10 of which were classed as slight in severity, with 8 serious and 1 fatal collisions recorded.

12.5.43 This has been further analysed based on the number of accidents on each particular link as supplied by the LHA.

**Table 12-13: Section 2 Accident Overview by Link**

Link	Slight	Serious	Fatal	Total
A18	2	0	0	2
A46	6	5	0	11
A1173	2	2	1	5
B1210	0	1	0	1
Total	10	8	1	19

12.5.44 As shown in **Table 12-13** above the A18 had a total of 22 collisions, both of which were slight in nature, and the A46 had a total of 11 collisions,6 classed as slight in nature with the remaining collisions all serious. The A1173 had a total of 5 recorded collisions including 1 fatal collision and the B1210 had 1 serious collision recorded.

12.5.45 **Table 12-14** below outlines the primary causal factor in the collisions as provided by the LHA.

**Table 12-14: Section 2 Accident Overview by Primary Causal Factor**

Primary Cause	Slight	Serious	Fatal	Total
Animal or object in carriageway	2	1	0	3
Careless, reckless or in a hurry	3	2	0	5
Failed to judge other persons path or speed	1	0	0	1
Failed to look properly	0	2	0	2
Fatigue	0	1	0	1
Illness or disability, mental or physical	0	1	0	1
Impaired by alcohol	1	0	0	1
Loss of control	2	1	1	4
Other - To be specified	1	0	0	1
Total	10	8	1	19

12.5.46 As shown in **Table 12-14** above all the primary causal factors are linked to factors not associated to the road network as such it can be concluded that the road network had no impact in the collisions within this route section.

### **Fatal collisions**

12.5.47 As noted above, one fatal collision occurred in 2017 on the A18 with the only causal factor linked to loss of control. None of the PICs were caused by issues relating to the road layout, either temporary or permanent. Therefore, as before it can be concluded that there is no inherent safety risk within this section associated with the road network.

## **Section 3**

### **Surrounding Highway Network**

12.5.48 This section describes the local highway network within Section 3. **Figure 12-1** provides an overview of the highway network across Section 3.

12.5.49 The key road links identified across Section 3 are identified below:

- A18;
- A46;
- A16;
- B1203;
- Thoroughfare; and
- Pear Tree Lane.

12.5.50 The A18 is a primary route that runs east to west linking Doncaster to Ludborough via Scunthorpe and Grimsby. The A1173 is rural in nature and is single carriageway with the

national speed limit applied. The A180 now supersedes this route as the main east west link through this part of Lincolnshire.

- 12.5.51 The A46 links Lincoln to Grimsby on a northeast/southwest alignment. The A1173 is rural in nature and is single carriageway with the national speed limit applied.
- 12.5.52 The A16 road is a principal road within Lincolnshire, connecting the port of Grimsby and Peterborough.
- 12.5.53 The B1203 links the suburbs of Grimsby across the Lincolnshire Wolds to Market Rasen via Binbrook. It starts in Scartho, on the southern edge of Grimsby, on the A1243 (former A16). It heads south to meet the B1219 in Waltham before continuing south-westwards. The A18 is crossed at a roundabout between Brigsley and East Ravendale before the road travels through Binbrook.
- 12.5.54 Thoroughfare runs on an east/west alignment next to Ashby cum Fenby and provides a link between Barton Street and the A16. In total the road has a length of 1.1km. The link is rural in nature and is single carriageway with the national speed limit applied. There is an 'unsuitable for heavy goods vehicles' restriction in place along this link.
- 12.5.55 Pear Tree Lane provides a link between the A18 and A1031 passing by Covenham Reservoir. The link is rural in nature and is single carriageway with the national speed limit applied.

**PRoW/NCN Network**

- 12.5.56 As can be seen on **Figure 12-2** there are a number of PRoW routes that both intersect and run alongside the route corridor. This includes route 124 on the western side of the route corridor to the north of the route section, which appears to stop short of the A18. Route 94 near Barnoldby Le Beck to the north of the route section, intersects with the A18 with informal crossing facilities in place.
- 12.5.57 Further south near Brigsley the corridor is intersected by route 81 and route 85 (Gnby/114/1) near Ashby Cum Fenby towards Grainsby. Further to the south there is another PRoW (NTho/110/1) that intersects the route corridor towards the village of North Thoresby. There are a number of PRoW that run across the A18 including the NTho/110/1 and NTho/110/1; as such consideration will be given to these routes as part of the overall assessment for both traffic and other disciplines.
- 12.5.58 Finally, it can also be seen that route 74 passes directly through the proposed pipe storage location/compound at Holton le Clay adjacent to the A16. In terms of the impact temporary stopping up orders may need to be put in place prior to the commencement of the Project.
- 12.5.59 In terms of the NCN there is one route that passes through the section across the A18 from Barnoldby Le Beck (Route 110). As such further consideration will be provided in regard to the impact.

**Baseline Traffic**

- 12.5.60 The ATC data have been used to derive 24 hour AADT and 18 hour AADT for individual links for total traffic and HGVs within Section 3. This information is presented in **Table 12-15**.

**Table 12-15: Section 3 24Hr AADT**

Road Name	ID	All Vehicles (Two-Way)	HGVs (Two-Way)	%HGVs
Waltham Road	7	4776	380	8.0%
Waltham Road	8	2572	203	7.9%

Road Name	ID	All Vehicles (Two-Way)	HGVs (Two-Way)	%HGVs
A16	9	10797	1287	11.9%
Thoroughfare	10	229	18	7.9%
Unnamed between A18 and A16	11	1687	263	15.6%
A18	12	5259	895	17.0%
A16	13	11384	1421	12.5%
A18 - Barton Street South	20	9892	1304	13.2%
A16 Peaks Parkway	21	15485	1396	9.0%
Pear Tree Lane	22	2098	248	11.8%
A18	27	3666	640	17.5%
B1219 - Station Road	48	12351	725	5.9%

**Table 12-16: Section 3 18Hr AADT**

Road Name	ID	All Vehicles (Two-Way)	HGVs (Two-Way)	%HGVs
Waltham Road	7	4638	371	8.0%
Waltham Road	8	2537	200	7.9%
A16	9	10475	1220	11.6%
Thoroughfare	10	228	18	7.9%
Unnamed between A18 and A16	11	1624	249	15.3%
A18	12	5070	846	16.7%
A16	13	11034	1346	12.2%
A18 - Barton Street South	20	9567	1239	13.0%
A16 Peaks Parkway	21	14995	1316	8.8%
Pear Tree Lane	22	2043	235	11.5%
A18	27	3557	605	17.0%
B1219 - Station Road	48	12134	711	5.9%

12.5.61 As can be seen a number of the main links within the surveyed section are heavily trafficked, with current HGV usage around or above 10%.

**Road Safety Analysis**

12.5.62 To ensure that there are no underlying highway safety issues across Section 3, personal PIC data has been analysed and is presented in **Figure 12-3** which outlines the section breaks.

**Table 12-17: Section 3 Accident Overview by Year**

Year	Slight	Serious	Fatal	Total
2017	8	3	2	13
2018	13	2	0	15
2019	16	1	0	17
2020	5	1	0	6
2021	3	5	0	8
Total	45	12	2	59

12.5.63 As shown in **Table 12-17** above a combined total of 59 collisions have been recorded across the highway network within Section 3, 45 of which were classed as slight in severity, with 12 serious and 2 fatal collisions recorded.

12.5.64 This has been further analysed based on the number of accidents on each particular link as supplied by the LHA.

**Table 12-18: Section 3 Accident Overview by Link**

Link	Slight	Serious	Fatal	Total
A18	8	2	2	12
A16	31	10	0	41
B1201	2	0	0	2
Unnamed	3	0	0	3
Waith Lane	1	0	0	1
Total	45	12	2	59

12.5.65 As shown in **Table 12-18** above the A18 had a total of 12 collisions, 2 of which were fatal, and the A16 had a total of 41 collisions, most of which were slight in nature. The remaining links had a total of 6 collisions between them, all of which were classed as slight in nature.

12.5.66 **Table 12-19** below outlines the primary causal factor in the collisions as provided by the LHA.

**Table 12-19: Section 3 Accident Overview by Primary Causal Factor**

Primary Cause	Slight	Serious	Fatal	Total
Careless, reckless or in a hurry	8	2	0	10
Poor turn or manoeuvre	3	1	0	4
Distraction in vehicle	1	0	1	2
Loss of control	7	3	0	10
Other - To be specified	2	2	0	4
Sudden braking	1	0	0	1
Failed to look properly	4	1	1	6
Failed to judge other persons path or speed	4	1	0	5
Dazzling Sun	1	0	0	1
Impaired by alcohol	3	1	0	4
Rain, sleet, snow or fog	1	0	0	1
Exceeding speed limit	1	0	0	1
Learner or inexperienced driver/rider	2	0	0	2
Distraction outside vehicle	2	0	0	2
Fatigue	3	0	0	3
Slippery road (due to weather)	0	1	0	1
No Reason Provided	2	0	0	2
Total	45	12	2	59

12.5.67 As shown in **Table 12-19** above all the primary causal factors are linked to factors not associated to the road network as such it can be concluded that the road network had no impact in the collisions within this route section.

**Fatal collisions**

12.5.68 As noted above two fatal collisions have occurred, both in 2017 on the A18 with the primary causal factor linked to failing to look properly and distraction in car which resulted in the occupant failing to look properly. None of the PICs were caused by issues relating to the road layout, either temporary or permanent. Therefore, as before it can be concluded that there is no inherent safety risk within this section associated with the road network.

## Section 4

### Surrounding Highway Network

12.5.69 This section describes the local highway network within Section 4. **Figure 12-1** provides an overview of the highway network across Section 4.

12.5.70 The key road links identified across Section 4 are identified below:

- A16; and
- B1200.

12.5.71 The A16 runs north to south through section 4 which provides a connection from Grimsby towards the south of the draft order limit. The A16 runs via Louth (to the south of the section) via western bypass that allows larger vehicles to be routed away from Louth and use alternative routes. The A16 provides access to other links within the area including the A153 towards Horncastle, A157 towards Wragby and the A631 towards Market Rasen.

12.5.72 The B1200 runs east to west along the southern extent of section 4. The B1200 is accessed via the A16 leading on to A157 which forms a roundabout with the B1200. The B1200 passes through the villages of Manby and Saltfleetby St Peter. With exception of these localised urban area the route is predominately rural in nature with differing speed limits ranging from 30mph to the national speed limit.

### PRoW/NCN Network

12.5.73 **Figure 12-2** provides an overview of the PRoW/NCN across this section of the route corridor.

12.5.74 There are number of PRoW that intersect the proposed route corridor. These include Utte/83/1 which runs west from Covenham St Mary towards Utterby. Further to the south there is also another PRoW (LGri/77/1) that runs east from Fotherby towards Grange Farm near Yarburgh.

12.5.75 Other affected PRoWs include Alvi/343/4, which runs between Alvingham to Louth on an east/west alignment, as well as NCoc/67/1 directly to the south. As such consideration will be given to these routes as part of the overall assessment for both traffic and other disciplines

12.5.76 Stopping up orders may need to be put in place prior to the commencement of the Project.

12.5.77 In terms of NCN there are no routes within this area, as such no disruption to the NCN is anticipated.

### Baseline Traffic

12.5.78 The ATC data have been used to derive 24 hour AADT and 18 hour AADT for individual links for total traffic and HGVs within Section 4. This information is presented in **Table 12-20**.

**Table 12-20: Section 4 24Hr AADT**

Road Name	ID	All Vehicles (Two-Way)	HGVs (Two-Way)	%HGVs
Ings Lane	23	274	30	10.9%
Alvingham Road	24	791	63	8.0%
Yarburgh Road	25	577	67	11.6%
Westfield Road	26	536	44	8.2%



Road Name	ID	All Vehicles (Two-Way)	HGVs (Two-Way)	%HGVs
A16	28	15211	1810	11.9%
Louth Bypass (HGV %ge taken from AADT data)	29	13812	799	5.8%
B1200 Manby Middlegate	30	3856	411	10.7%
Lock Road	46	656	81	12.3%

**Table 12-21: Section 4 18Hr AADT**

Road Name	ID	All Vehicles (Two-Way)	HGVs (Two-Way)	%HGVs
Ings Lane	23	270	29	10.7%
Alvingham Road	24	779	62	8.0%
Yarburgh Road	25	567	65	11.5%
Westfield Road	26	522	43	8.2%
A16	28	14709	1703	11.6%
Louth Bypass (HGV %ge taken from AADT data)	29	13277	768	5.8%
B1200 Manby Middlegate	30	3778	396	10.5%
Lock Road	46	646	79	12.2%

12.5.79 The majority of links within the section are heavily trafficked, with current HGV usage at or slightly above 10%.

12.5.80 It is noted the Louth Bypass ATC was conducted using radar as such no specific HGV value can be estimated from this data. However, this has then been supplemented by DfT AADT data which indicates an HGV percentage of 5.8%.

**Road Safety Analysis**

12.5.81 To ensure that there are no underlying highway safety issues across Section 4, personal PIC data has been analysed and is presented in **Figure 12-3** which outlines the section breaks.

**Table 12-22: Section 4 Accident Overview by Year**

Year	Slight	Serious	Fatal	Total
2017	17	4	0	21
2018	5	3	0	8
2019	13	4	0	17
2020	12	2	0	14

Year	Slight	Serious	Fatal	Total
2021	14	5	3	22
Total	61	18	3	82

12.5.82 As shown above a combined total of 82 collisions have been recorded across the highway network within Section 4, 61 of which were classed as slight in severity, with 18 serious and 3 fatal collisions recorded.

12.5.83 This has been further analysed based on the number of accidents on each particular link as supplied by the LHA.

**Table 12-23: Section 4 Accident Overview by Link**

Link	Slight	Serious	Fatal	Total
A157	5	2	0	7
B1200	8	3	0	11
A16	36	5	3	44
Grimsby Road	2	2	0	4
Alvingham Road	1	2	0	3
Keddington Road	0	1	0	1
A18	1	0	0	1
Unnamed	7	2	0	9
B1520	1	1	0	2
Total	61	18	3	82

12.5.84 As shown above the A16 had a total of 44 collisions, three of which were fatal, and the B1200 had a total of 11 collisions most of which were slight in nature. The remaining links had a total of 27 collisions between them, most of which were classed as slight in nature.

12.5.85 **Table 12-24** below outlines the primary causal factor in the collision as provided by the LHA.

**Table 12-24: Section 4 Accident Overview by Primary Causal Factor**

Factor	Slight	Serious	Fatal	Total
Careless, reckless or in a hurry	7	4	1	12
Poor turn or manoeuvre	1	0	0	1
Distraction in vehicle	3	0	0	3
Loss of control	6	0	0	6
Other - To be specified	1	2	1	4

Factor	Slight	Serious	Fatal	Total
Animal or object in carriageway	2	0	0	2
Failed to look properly	8	2	0	10
Failed to judge other persons path or speed	7	1	0	8
Dazzling sun	1	0	0	1
Impaired by alcohol	4	1	0	5
Road layout (e.g. bend, winding road, hill crest)	2	0	0	2
Exceeding speed limit	0	1	1	2
Following too close	2	0	0	2
Learner or inexperienced driver/rider	0	2	0	2
Fatigue	1	0	0	1
Slippery road (due to weather)	5	1	0	6
Road layout (e.g. bend, hill narrow carriageway)	0	1	0	1
Impaired by drugs (illicit or medicinal)	1	0	0	1
Temporary road layout (e.g. contraflow)	1	0	0	1
Travelling too fast for conditions	1	0	0	1
Aggressive driving	1	3	0	4
No Reason Provided	7	0	0	7
<b>Total</b>	<b>61</b>	<b>18</b>	<b>3</b>	<b>82</b>

12.5.86 As shown in **Table 12-24** most of the primary causal factors are linked to factors not associated to the road network 1 serious collision is associated with the road layout with 1 slight collision associated with the temporary road layout. Overall, it can be concluded that the road network had no impact in the collisions within this route section.

**Fatal collisions**

12.5.87 As noted above 3 fatal collisions have occurred, all in 2021 on the A16 with the primary causal factor linked to reckless driving and exceeding the speed limit. Therefore, as before it can be concluded that there is no inherent safety risk within this section associated with the road network.

## Section 5

### Surrounding Highway Network

12.5.88 This section describes the local highway network within Section 5. **Figure 12-1** provides an overview of the highway network across Section 5.

12.5.89 The key road links identified across Section 5 are identified below:

- A157
- A1104
- A1031; and
- Three Bridge Lane.

12.5.90 The A157 runs from the south of Louth on a south easterly alignment through a series of residential areas including Legbourne and Withern before terminating close to Maltby le Marsh where it joins with the A1104. The A157 has a series of varying speed limits from 30mph within the residential areas to the national speed limit outside of these areas.

12.5.91 The A1104 runs of a southern alignment from Mablethorpe towards Maltby le Marsh, the link is a mixture of rural land with intermittent residential areas and leisure facilities. The A1104 has a series of varying speed limits from 30mph within the residential areas to the national speed limit outside of these areas.

12.5.92 The A1031 runs north to south along the coast from Grimsby to Mablethorpe via series of villages including Tetney, North Somercotes and Saltfleet. The A1031 has a series of varying speed limits from 30mph within the residential areas to the national speed limit outside of these areas.

12.5.93 Three Bridge Lane runs north to south off the B1200 near Saltfleetby St Peter which connects onto Thacker Bank which provides an east/west link across the draft order limit, the link is rural in nature characterised by agricultural use.

### PRoW/NCN Network

12.5.94 **Figure 12-2** provides an overview of the PRoW/NCN in Section 5. There is only one PRoW that intersects the Draft Order Limits which is GayM/193/1 which runs east/west across the corridor from Theddlethorpe All Saints towards Gayton Le Marsh. It is also noted that there are several PRoW surrounding the A173 and the A1104. As such consideration will be given to these routes as part of the overall assessment for both traffic and other disciplines

12.5.95 Temporary stopping up orders may need to be put in place prior to the commencement of the Project.

12.5.96 In terms of NCN there are no routes within this area, as such no disruption to the NCN is anticipated.

### Baseline Traffic

12.5.97 The ATC data have been used to derive 24 hour AADT and 18 hour AADT for individual links for total traffic and HGVs within Section 5. This information is shown in the **Table 12-15**.

**Table 12-25: Section 5 24Hr AADT**

Road Name	ID	All Vehicles (Two-Way)	HGVs (Two-Way)	%HGVs
A157	31	3799	384	10.1%

Road Name	ID	All Vehicles (Two-Way)	HGVs (Two-Way)	%HGVs
A157	32	2451	239	9.8%
Saltfleet Road	33	3159	327	10.4%
A1031	34	4172	385	9.2%
Thacker Bank	35	181	23	12.7%
Thacker Bank	36	2044	164	8.0%
Alford Road	37	6280	570	9.1%
Three Bridge Lane	38	1892	983	52.0%
Mill Road	39	2131	198	9.3%
Station Road	40	169	48	28.4%
A16	47	9355	1292	13.8%

**Table 12-26: Section 5 18Hr AADT**

Road Name	ID	All Vehicles (Two-Way)	HGVs (Two-Way)	%HGVs
A157	31	3728	372	10.0%
A157	32	2402	230	9.6%
Saltfleet Road	33	3121	320	10.3%
A1031	34	4109	378	9.2%
Thacker Bank	35	176	22	12.5%
Thacker Bank	36	2001	156	7.8%
Alford Road	37	6176	556	9.0%
Three Bridge Lane	38	1847	960	52.0%
Mill Road	39	2088	191	9.1%
Station Road	40	169	48	28.4%
A16	47	9093	1212	13.3%

12.5.98 Most of the links within the surveyed section are heavily trafficked with current HGV mainly around 10% with the exception of Three Bridges Lane which is 52% and Station Road at 28.4%.

### **Road Safety Analysis**

12.5.99 To ensure that there are no underlying highway safety issues across Section 5, personal PIC data have been analysed and is shown on **Figure 12-3** which outlines the section breaks.

**Table 12-27: Section 5 Accident Overview by Year**

Year	Slight	Serious	Fatal	Total
2017	11	6	0	17
2018	11	3	0	14
2019	12	4	0	16
2020	5	4	1	10
2021	5	5	0	10
Total	44	22	1	67

12.5.100 As shown above a combined total of 67 collisions have been recorded across the highway network within Section 5, 44 of which were classed as slight in severity, with 22 serious and 1 fatal collisions recorded.

12.5.101 This has been further analysed based on the number of accidents on each particular link as supplied by the LHA.

**Table 12-28: Section 5 Accident Overview by Link**

Link	Slight	Serious	Fatal	Total
Church Lane	5	2	0	7
A157	17	7	1	25
A1031	7	1	0	8
A1104	7	8	0	15
Lordship Road	1	0	0	1
Stain Lane	1	1	0	2
B1200	3	2	0	5
Unnamed	2	1	0	3
Three Bridge Lane	1	0	0	1
Total	44	22	1	67

12.5.102 As shown in **Table 12-28** the A157 had a total of 25 collisions, one of which was fatal, the A1104 had a total of 15 collisions split 50/50 slight to serious, the remaining links had a total of 27 collisions between them, most of which were classed as slight in nature.

12.5.103 **Table 12-29** outlines the primary causal factor in the collision as provided by the LHA.

**Table 12-29: Section 5 Accident Overview by Primary Causal Factor**

Factor	Slight	Serious	Fatal	Total
Careless, reckless or in a hurry	8	4	1	13
Nervous, uncertain or panic	2	0	0	2
Distraction in vehicle	1	1	0	2
Loss of control	7	1	0	8
Other - To be specified	1	0	0	1
Junction overshoot	3	0	0	3
Failed to look properly	2	2	0	4
Failed to judge other persons path or speed	1	0	0	1
Dazzling sun	2	0	0	2
Impaired by alcohol	1	3	0	4
Road layout (e.g. bend, winding road, hill crest)	1	0	0	1
Exceeding speed limit	1	1	0	2
Following too close	0	1	0	1
Learner or inexperienced driver/rider	1	0	0	1
Illness or disability, mental or physical	1	1	0	2
Slippery road (due to weather)	0	2	0	2
Road layout (e.g. bend, hill narrow carriageway)	0	1	0	1
Sudden braking	0	1	0	1
Rain, sleet, snow or fog	0	1	0	1
Travelling too fast for conditions	2	0	0	2
Aggressive driving	1	1	0	2
No Reason Provided	4	0	0	4
Inadequate/Masked signs/markings	1	0	0	1
Distraction outside vehicle	2	0	0	2
Vehicle blind spot	0	1	0	1
Failed to signal or misleading signal	1	1	0	2
Poor or defective road surface	1	0	0	1
Total	44	20	1	67

12.5.104 Most of the primary causal factors are linked to factors not associated to the road network. One serious collision is associated with the road layout, with one slight collision

associated with inadequate signs or marking and one collision associated with a poor or defective road surface. Overall it is concluded that the road network had no impact in the collisions within Section 5.

### **Fatal collisions**

- 12.5.105 This section focuses on the recorded fatal collisions that occurred within Section 5.
- 12.5.106 As noted above one fatal collision occurred in 2021 on the A16 with the primary causal linked to reckless driving and exceeding the speed limit. Therefore, as before, it can be concluded that there is no inherent safety risk within this section associated with the road network

## **12.6 Trip Generation**

- 12.6.1 The predicted construction related traffic calculations identify the number of HGVs, LGVs and cars per month divided into likely movements per day based on the working patterns.
- 12.6.2 It is recognised that the works schedule will likely be completed by multiple teams working across the Project at any one time and the phasing of activities are likely to be overlapping throughout the programme. At this stage, the construction programme is approximate and has been developed for the purpose of estimating traffic flows. It will be subject to further development and confirmation upon appointing a Contractor to deliver the works. Approximate dates of construction are presented in the PEIR Volume IV Appendix 12-1.
- 12.6.3 As can be seen the delivery of the sections of pipe to the pipe dumps will commence prior to any other works, which is why two separate sets of trip generation information have been provided.
- 12.6.4 **Table 12-30** presents the trip generation figures in relation to the two proposed construction activities, namely pipe delivery and construction of the Project. **Table 12-30** to **Table 12-34** below present each of the separate trip generation calculations as the pipe delivery (as shown within the programme) will commence and be completed prior to construction and, as such, it is not envisaged that both activities will be ongoing simultaneously – based on the programme the pipe delivery aspect will be undertaken in 2026 with construction in 2027.
- 12.6.5 In total there are predicted to be approximately 5000 pipes required which is split 60/40 as 3,000 sections of pipe are proposed to be stored at Pipe Dump 1 in the north and 2,000 sections are to be stored at Pipe Dump 2 in the south. In total, due to weight restrictions on U.K. roads, 2 pipes can be transported at any one time which results in 2500 one-way trips to pick up them up and then a further 2500 one trips to take them to their respective locations ready for the construction activities.
- 12.6.6 The pipe delivery generation has been based on a total of 13 weeks with a 5.5 day working week. **Table 12-30** below outlines the proposed trip generation for the pipe delivery scenario based on quantity of material outlined above.



**Table 12-30: Pipe Delivery Trip Generation**

Activity	Two-Way
Pipe Dump 1 Weekly Flatbed Movements	234
Pipe Dump 2 Weekly Flatbed Movements	156
Total Pipe Dump Weekly Trips	391
Total Daily Trips (5.5 day working week assumed)	71
Pipe Dump 1 Daily Trips	43
Pipe Dump 2 Daily Trips	28

12.6.7 As shown in **Table 12-30** a total of 71 daily HGV two way trips are predicted to be generated by the pipe delivery. This results in 43 daily two-way trips to pipe dump 1 and 28 to pipe dump 2.

12.6.8 There is a further pipe dump located at Theddlethorpe which will route from Immingham, via the A1031. This will require a total of 51 HGVS (102 Two-Way Trips) to transport the pipes over a 13 week period, which results in around 8 HGVS per week, which is unlikely to have significant effect on the network, as such this excluded from the assessment.

12.6.9 **Table 12-31** outlines the trip generation associated with the construction activities, this has been categorised into both construction worker vehicles and construction vehicles (LGV and HGV).

**Table 12-31: Construction Workers Weekly Two-Way Flows**

Vehicle type	In Weekly	Out Weekly	Total two Way Weekly
Cars	120	120	240
Minibuses	18	18	36
4*4	180	180	360
Total	318	318	636

12.6.10 **Table 12-31** shows the proposed number of weekly construction worker vehicle movements associated with the development which totals 636 two-way movements.

**Table 12-32: Construction Workers Daily Two-Way Flows (Based on a 5.5 working week)**

Vehicle type	Daily In	Daily Out	Total Two-Way Daily Flow
Cars	22	22	44
Minibuses	3	3	7
4*4	33	33	65
Total	58	58	116

12.6.11 The daily profile is reported in **Table 12-32** above. This is based on a 5.5 day working week to outline the daily traffic flows associated with this section of the development. As shown, there are a total of 116 two way movements predicted to be generated on a daily basis associated with worker movements.

**Table 12-33: Construction Vehicle LGV and HGV Weekly Two-Way Flows**

Vehicle Type	In Weekly	Out Weekly	Total two Way Weekly
LGVs	180	180	360
HGVs	209	209	418
Total	389	389	778

12.6.12 **Table 12-33** above shows the proposed number of weekly construction vehicles associated with the development which totals 778 two-way movements, split by 360 two way LGV movements and 418 two way HGV movements.

**Table 12-34: Construction Vehicle LGV and HGV Daily Two-Way Flows (Based on a 5.5 working week)**

Vehicle Type	Daily In	Daily Out	Daily Two Way
LGVs	33	33	65
HGVs	38	38	76
Total	71	71	142

12.6.13 The daily profile can then be shown above, based on a 5.5 day working week to outline the daily LGV and HGV traffic flows. As shown there are a total of 142 two way movements predicted to be generated on a daily basis – 76 two way HGV movements and 65 LGV two way daily movements.

12.6.14 TEMPro growth factors have been extracted to account for future growth on the network from 2022 to 2027 The ATCs were growthed based on the average weekday growth for the entire of East Lindsey, North East Lincolnshire and North Lincolnshire. For robustness and consistency, the average growth factor across these three areas was applied to the counts.

12.6.15 **Table 12-35** outlines the growth factors for each area along with the applied average factor that has been applied to the 2022 ATCs, and as can be seen the factors are broadly similar across each of the areas.

**Table 12-35: TEMPro Growth Factors**

	East Lindsey	North East Lincs	North Lincs	Average
<b>2022-2026</b>	1.056	1.055	1.062	1.057
<b>2022-2027</b>	1.065	1.065	1.073	1.067

12.6.16 All construction traffic will be subject to the policies and procedures specified in the Outline CTMP and site worker will be the focus of mitigation measures to reduce its traffic impact.

## 12.7 Mitigation

### Embedded Mitigation

12.7.1 EIA is an iterative process which informs the development of a project’s design. Where the outputs of the preliminary assessment identify likely significant effects, changes to the design can be made or mitigation measures can be built-in to the proposal to reduce these effects.

- 12.7.2 This type of mitigation is defined as embedded mitigation, as mitigation measures which have been identified and adopted as part of the evolution of the Project design (“embedded” into the Project design).
- 12.7.3 The design of the Project will be further developed to reflect the findings of ongoing environmental studies, comments raised during this statutory consultation and ongoing engagement with stakeholders. As the design develops, the embedded mitigation measures will also be refined as part of an iterative process.
- 12.7.4 Embedded mitigation measures that will be applied are summarised as follows:
- All access points that require the creation of a junction bellmouth will be designed based on the relevant standard from DMRB CD 123 Geometric Design of at grade priority and signal-controlled junctions and in consultation with the LHA, thereby negating any potential safety impact associated with construction activity.
  - It is anticipated that all mitigation required will be set out within the outline designs where required for route improvements between the A road network and compounds and the compound access junctions. Swept path analysis will be presented to support these designs. Temporary diversion or other mitigation measures for footpaths and cycle paths will be proposed where necessary.

### Additional Mitigation

- 12.7.5 A Preliminary Draft Construction Environmental Management Plan (CEMP) has been prepared as part of this PEIR and can be found in *PEIR Volume IV: Appendix 3.1*. This sets out the preliminary additional and enhancement mitigation measures identified in this preliminary assessment of significant effects. The mitigation presented in the Draft CEMP will be secured through a requirement within the DCO, which requires a CEMP to be submitted for approval after the grant of development consent.
- 12.7.6 This section summarises the types of mitigation measures that will be considered to mitigate against the effects on traffic and transport where required. These measures should be adopted during the construction phase and will be refined and be developed as part of the construction assessment for the ES:
- *H1: Produce a Traffic Management Plan to establish construction vehicle routeing, safe access and egress to construction compounds and pipe storage areas in consultation with the Highways Authorities. This will include such items as:*
    - *The necessary agreements and timing restrictions for construction traffic for example Monday – Saturday working, prohibition during school drop-off and pick-up times (this will be managed by appropriate measures in the Construction Traffic Management Plan (CTMP) which will likely prohibit movements during busy network periods), and prohibition during loading times at commercial premises;*
    - *Proposals for monitoring and agreeing maintenance costs;*
    - *Escort arrangements for abnormal loads;*
    - *Route signing;*
    - *Details of the advanced notification to the general public, warning of any construction transport movements, specifically AILs;*
    - *Details of information and road signage warning road users of forthcoming AIL transport and construction traffic movements;*

- *Arrangements for regular road maintenance and cleaning, e.g., road sweeping in the vicinity of the site access point as necessary, drain clearing, wheel cleaning / dirt control arrangements;*
- *Arrangements for winter road maintenance e.g., de-icing and snow clearing;*
- *Construction Contractor speed limits; and*
- *Community and emergency services liaison details.*
- *H2: Produce a Construction Logistics Plan to manage sustainable delivery of goods and materials; and*
- *H3: Implement a Travel Plan that supports and encourages sustainable travel by workers (public transport, cycling, walking and car-sharing.*

12.7.7 Programming of HGV movements may be subject to restricted periods of the day and the working week. It is envisaged that such periods could be restricted to 08:30-16:00 Monday to Friday and 09:00-13:30 Saturday with no working on Sundays or Public Bank Holidays.

12.7.8 Other minor highway improvements could potentially be carried out in sensitive locations to reduce the impact of the construction traffic.

12.7.9 The assessment of routes from the A road network to individual construction compounds and other site accesses will determine the feasibility of routes and where mitigation works are required. The impact of any cut and cover road crossings will be assessed to determine the appropriate measure to mitigate the impact.

## 12.8 Preliminary Assessment of Effects

### Construction Phase

12.8.1 During construction, there will be temporary increases in traffic flows on the road network that will be used by construction vehicles to access the construction compound(s) and the spread. The network of roads affected will be extensive, stretching from the Immingham Dock to an area north of Mablethorpe, plus any wider routes that could potentially be used to deliver construction plant and materials. A key change from the baseline position is the number of additional HGVs using local roads and the percentage increase over the baseline numbers.

12.8.2 Other aspects of the construction phase could lead to a significant effect, such as:

- Significant severance to communities caused by a large increase in traffic for a longer period;
- Increased risk of road traffic accidents caused by a large increase in traffic for a longer period;
- Temporary road closures and diversions;
- Construction traffic using temporary bell mouths and site entrances for access to construction areas; and
- Temporary closures or diversions of PRow and other public access routes.

12.8.3 At this stage, an assessment of impacts on users of PRow has not been completed. However, given the commitment to only temporary diversions, and the relatively short construction programme proposed, means that effects are unlikely to be significant.

12.8.4 As part of the construction phase, two different scenarios have been considered that will allow for a robust assessment of the potential impact. The scenarios considered are:

- The first scenario, which is reported in **Table 12-36** considers the impact of the delivering sections of pipe to two different construction compounds. These are the preferred northern compound and the preferred central compound. The compound at the TGT site has not been assessed at this stage as it is highly unlikely to lead to significant effects, as only around 50 lengths of 36” pipe would need to be delivered there, and, once delivered, most of the pipe would be delivered to the spread without being taken back onto the road network.
- The second scenario (**Table 12-37**) considers the impact of the busiest month of construction activities which, based on the data provided, would be June 2027. This scenario considers all car, LGV and HGV movements.

12.8.5 The preliminary assessment is undertaken with the assumption that the embedded and additional mitigation measures are in place. The assessment of the second scenario provides a snapshot of the preliminary assessment of the route between Holton le Clay and Ludborough based the peak of construction within the programme. Based on this assessment one route within section 3 would experience a significant effect (Properties off Thoroughfare South of Ashby Cum Fenby).

12.8.6 As the assessment undertaken up to now is a snapshot of the peak month of construction, it does not consider all potential construction traffic routes. The peak traffic impact on the remaining links will be assessed in full as part of the ES chapter; However at this stage we would anticipate that these would experience similar levels of effect, as these would not be impacted by the peak of construction activity. Confidence in this prediction is low, given the assessment has not yet been undertaken.

12.8.7 *PEIR Volume IV Appendix 12-2* provides an overview of the quantitative data used to inform the preliminary assessment outlined within **Table 12-36** and **Table 12-37** below.

**Table 12-36: Preliminary Assessment of Traffic and Transport for the Construction Phase – 24hr AADT Assessment – Pipe Delivery**

Receptor	Potential Impact	Duration	Mitigation	Likely significance of effect	Confidence in Prediction
3 - Industrial Area (ATC Site 42) – Section 1	Additional traffic movements (particularly HGV's) during the construction phase	Short Term Impact – Effects likely to last ~3 months	A detailed CTMP will be developed to manage the number of journeys and the routing of traffic away from sensitive locations (if available). The mitigation section above provides an overview of the proposed actions that will be taken to limit the impact.	<b>Not Significant</b> – Within the proposed peak of pipe delivery the vehicles moving the pipes will transfer the goods from Immingham Port via Kings Road and the A1173 towards the towards the pipe dump near Holton le Clay. The proposed routing is already an established haulage route with significant numbers of HGVs as noted in the baseline section above. As such the numbers of proposed HGVs is relatively minor in comparison to existing HGV levels within the area which are currently ~28.4%.	Moderate – The existing HGV proportions on the link indicate that the link is already heavily used by HGV traffic Therefore, this combined with a relatively minor number of construction HGVs indicates there would need to be significant levels of proposed HGVs in order to result in a severe impact.
4 - Truckstop MSA/Local Businesses (ATC Site 44) – Section 1	Additional traffic movements (particularly HGV's) during the construction phase	Short Term Impact – Effects likely to last ~3 months	A detailed CTMP will be developed to manage the number of journeys and the routing of traffic away from sensitive locations (if available). The mitigation section above provides an overview of the	<b>Not Significant</b> – Within the proposed peak of pipe delivery the vehicles moving the pipes will transfer the goods from Immingham Port via Manby Road and the A160 towards the towards the proposed pipe dump near the A1077. The proposed routing is already an established	Moderate – The existing HGV proportions on the link indicate that the link is already heavily used by HGV traffic. Therefore, this combined with a relatively minor number of construction HGVs indicates there would need to be

Receptor	Potential Impact	Duration	Mitigation	Likely significance of effect	Confidence in Prediction
			proposed actions that will be taken to limit the impact.	haulage route with significant numbers of HGVs as noted in the baseline section above. As such the numbers of proposed HGVs is relatively minor in comparison to existing HGV levels within the area which are currently ~40.3%.	significant levels of proposed HGVs in order to result in a severe impact.
5 - A180/A16 Grimsby Town Centre (ATC Site 49) - Section 1	Additional traffic movements (particularly HGV's) during the construction phase	Short Term Impact – Effects likely to last ~3 months	A detailed CTMP will be developed to manage the number of journeys and the routing of traffic away from sensitive locations (if available). The mitigation section above provides an overview of the proposed actions that will be taken to limit the impact.	<b>Not Significant</b> – Within the proposed peak of pipe delivery the vehicles moving the pipes will transfer the goods from Immingham Port via Grimsby towards the pipe dump near Holton le Clay. The proposed routing is already an established haulage route with significant numbers of HGVs as noted in the baseline section above. As such the numbers of proposed HGVs is relatively minor in comparison to existing HGV levels within the area which are currently ~5%.	Moderate – The existing HGV proportions on the link indicate that the link is already heavily used by HGV traffic. Therefore, this combined with a relatively minor number of construction HGVs indicates there would need to be significant levels of proposed HGVs in order to result in a severe impact. .
1 - Holton le Clay (ATC Site 9) –Section 3	Additional traffic movements (particularly HGV's) during	Short Term Impact – Effects likely to last ~3 months	A detailed CTMP will be developed to manage the number of journeys and the routing of traffic away	<b>Not Significant</b> – Within the proposed peak of pipe delivery the vehicles moving the pipes will transfer the goods from Immingham Port via Grimsby	Moderate – The existing high HGV proportions on the link indicate that the link is already heavily used by HGV traffic

Receptor	Potential Impact	Duration	Mitigation	Likely significance of effect	Confidence in Prediction
	the construction phase		from sensitive locations (if available). The mitigation section above provides an overview of the proposed actions that will be taken to limit the impact.	towards the pipe dump near Holton le Clay. The proposed routing is already an established haulage route with significant numbers of HGVs as noted in the baseline section above. As such the numbers of proposed HGVs is relatively minor in comparison to existing HGV levels within the area which are currently ~12%	Therefore, this combined with a relatively minor number of construction HGVs indicates there would need to be significant levels of proposed HGVs in order to result in a severe impact.
2 - St Hugh's Hospital (ATC Site 21) - Section 3	Additional traffic movements (particularly HGV's) during the construction phase	Short Term Impact – Effects likely to last ~3 months	A detailed CTMP will be developed to manage the number of journeys and the routing of traffic away from sensitive locations (if available). The mitigation section above provides an overview of the proposed actions that will be taken to limit the impact.	<b>Not Significant</b> – Within the proposed peak of pipe delivery the vehicles moving the pipes will transfer the goods from Immingham Port via Grimsby towards the pipe dump near Holton le Clay. The proposed routing is already an established haulage route with significant numbers of HGVs as noted in the baseline section above. As such the numbers of proposed HGVs is relatively minor in comparison to existing HGV levels within the area which are currently ~10%	Moderate – The existing HGV proportions on the link indicate that the link is already heavily used by HGV traffic. Therefore, this combined with a relatively minor number of construction HGVs indicates there would need to be significant levels of proposed HGVs in order to result in a severe impact.



**Table 12-37: Preliminary Assessment of Traffic and Transport for the Construction Phase – 24hr AADT Assessment – Construction Vehicles and Workers**

Receptor	Potential Impact	Duration	Mitigation	Likely significance of effect	Confidence in Prediction
A180/A16 Grimsby Town Centre (ATC Site 49) - Section 1	Additional traffic movements (particularly HGV's) during the construction phase	Medium Term Impact – Effects likely to last ~1 year. The flows will fluctuate across the year. As part of the assessment the likely worst case has been assessed to provide a robust assessment of the impacts.	A detailed CTMP will be developed to manage the number of journeys and the routing of traffic away from sensitive locations (if available). The mitigation section above provides an overview of the proposed actions that will be taken to limit the impact.	<b>Not Significant</b> –The proposed routing is already an established haulage route with a number of HGVs as noted in the baseline section above. As such the numbers of proposed HGVs is relatively minor in comparison to existing HGV levels within the area which are currently ~5%.	Moderate – The existing high HGV proportions on the link indicate that the link is already heavily used by HGV traffic. Therefore, this combined with a relatively minor number of construction HGVs indicates there would need to be significant levels of proposed HGVs in order to result in a severe impact.
Local Businesses (Farm and Camp Site) (ATC Site 18) – Section 2	Additional traffic movements (particularly HGV's) during the construction phase	Medium Term Impact –_Effects likely to last ~1 year. The flows will fluctuate across the year. As part of the assessment the likely worst case has been assessed to provide a robust assessment of the impacts.	A detailed CTMP will be developed to manage the number of journeys and the routing of traffic away from sensitive locations (if available).. The mitigation section above provides an overview of the proposed actions	<b>Not Significant</b> –The proposed routing is already an established haulage route with significant numbers of HGVs as noted in the baseline section above. As such the numbers of proposed HGVs is relatively minor in comparison to existing HGV levels within the area which are currently ~16.1%	Moderate – The existing high HGV proportions on the link indicate that the link is already heavily used by HGV traffic. Therefore, this combined with a relatively minor number of construction HGVs indicates there would need to be significant levels of proposed

Receptor	Potential Impact	Duration	Mitigation	Likely significance of effect	Confidence in Prediction
			that will be taken to limit the impact.		HGVs in order to result in a severe impact.
Local Farm (ATC Site 6) - Section 3	Additional traffic movements (particularly HGV's) during the construction phase	Medium Term Impact – Effects likely to last ~1 year. The flows will fluctuate across the year. As part of the assessment the likely worst case has been assessed to provide a robust assessment of the impacts.	A detailed CTMP will be developed to manage the number of journeys and the routing of traffic away from sensitive locations (if available). The mitigation section above provides an overview of the proposed actions that will be taken to limit the impact.	<b>Not Significant</b> –The proposed routing is already an established haulage route with significant numbers of HGVs as noted in the baseline section above. As such the numbers of proposed HGVs is relatively minor in comparison to existing HGV levels within the area which are currently ~18%.	Moderate – The existing high HGV proportions on the link indicate that the link is already heavily used by HGV traffic. Therefore, this combined with a relatively minor number of construction HGVs indicates there would need to be significant levels of proposed HGVs in order to result in a severe impact.
Waltham/Brigsley (ATC Site 8) - Section 3	Additional traffic movements (particularly HGV's) during the construction phase	Medium Term Impact – Effects likely to last ~1 year. The flows will fluctuate across the year. As part of the assessment the likely worst case has been assessed to provide a robust assessment of the impacts.	A detailed CTMP will be developed to manage the number of journeys and the routing of traffic away from sensitive locations (if available). The mitigation section above provides an overview of the proposed actions	<b>Not Significant</b> –The proposed routing is already an established haulage route with significant numbers of HGVs as noted in the baseline section above. As such the numbers of proposed HGVs is relatively minor in comparison to existing HGV levels within the area which are currently ~8.8%	Moderate – The existing high HGV proportions on the link indicate that the link is already heavily used by HGV traffic. Therefore, this combined with a relatively minor number of construction HGVs indicates there would need to be significant levels of proposed

Receptor	Potential Impact	Duration	Mitigation	Likely significance of effect	Confidence in Prediction
			that will be taken to limit the impact.		HGVs in order to result in a severe impact.
1 - Holton le Clay (ATC Site 9) - Section 3	Additional traffic movements (particularly HGV's) during the construction phase	Medium Term Impact – Effects likely to last ~1 year. The flows will fluctuate across the year. As part of the assessment the likely worst case has been assessed to provide a robust assessment of the impacts.	A detailed CTMP will be developed to manage the number of journeys and the routing of traffic away from sensitive locations (if available). The mitigation section above provides an overview of the proposed actions that will be taken to limit the impact.	<b>Not Significant</b> –The proposed routing is already an established haulage route with significant numbers of HGVs as noted in the baseline section above. As such the numbers of proposed HGVs is relatively minor in comparison to existing HGV levels within the area which are currently ~12 %	Moderate – The existing high HGV proportions on the link indicate that the link is already heavily used by HGV traffic. Therefore, this combined with a relatively minor number of construction HGVs indicates there would need to be significant levels of proposed HGVs in order to result in a severe impact.
Properties off Thoroughfare South of Ashby Cum Fenby (ATC Site 10) - Section 3	Additional traffic movements (particularly HGV's) during the construction phase	Short Term Impact – Effects likely to last ~3 months	A detailed CTMP will be developed to manage the number of journeys and the routing of traffic away from sensitive locations (if available). The mitigation section above provides an overview of the proposed actions	<b>Significant</b> –The proposed routing does contain a number of HGV movements in the region of ~9% of all traffic, which may lead to significant short term effects.	Moderate – The link is currently used by HGV traffic. However, the relatively low overall AADT indicates that a relatively small increase in construction traffic could have a disproportionate percentage increase.

Receptor	Potential Impact	Duration	Mitigation	Likely significance of effect	Confidence in Prediction
			that will be taken to limit the impact.		
Local Properties (ATC Site 11) - Section 3	Additional traffic movements (particularly HGV's) during the construction phase	Short Term Impact – Effects likely to last ~3 months	A detailed CTMP will be developed to manage the number of journeys and the routing of traffic away from sensitive locations (if available). The mitigation section above provides an overview of the proposed actions that will be taken to limit the impact.	<b>Not Significant</b> –The proposed routing does contain a number of HGV movements in the region of ~15% of all traffic.	Moderate – The existing HGV proportions on the link indicate that the link is used by HGV traffic. However, the relatively low overall AADT indicates that a relatively small increase in construction traffic could have a disproportionate percentage increase
Local Properties/Businesses (ATC Site 12) - Section 3	Additional traffic movements (particularly HGV's) during the construction phase	Medium Term Impact – Effects likely to last ~1 year. The flows will fluctuate across the year. As part of the assessment the likely worst case has been assessed to provide a robust assessment of the impacts.	A detailed CTMP will be developed to manage the number of journeys and the routing of traffic away from sensitive locations (if available). The mitigation section above provides an overview of the proposed actions that will be taken to limit the impact.	<b>Not Significant</b> –The proposed routing is already an established haulage route with significant numbers of HGVs as noted in the baseline section above. As such the numbers of proposed HGVs is relatively minor in comparison to existing HGV levels within the area which are currently ~16%	Moderate – The existing high HGV proportions on the link indicate that the link is already heavily used by HGV traffic. Therefore, this combined with a relatively minor number of construction HGVs indicates there would need to be significant levels of proposed

Receptor	Potential Impact	Duration	Mitigation	Likely significance of effect	Confidence in Prediction
					HGVs in order to result in a severe impact.
Local Properties/Businesses (ATC Site 13) - Section 3	.Additional traffic movements (particularly HGV's) during the construction phase	Medium Term Impact – Effects likely to last ~1 year. The flows will fluctuate across the year. As part of the assessment the likely worst case has been assessed to provide a robust assessment of the impacts.	A detailed CTMP will be developed to manage the number of journeys and the routing of traffic away from sensitive locations (if available). The mitigation section above provides an overview of the proposed actions that will be taken to limit the impact.	<b>Not Significant</b> –The proposed routing is already an established haulage route with significant numbers of HGVs as noted in the baseline section above. As such the numbers of proposed HGVs is relatively minor in comparison to existing HGV levels within the area which are currently ~12.5%	Moderate – The existing high HGV proportions on the link indicate that the link is already heavily used by HGV traffic. Therefore, this combined with a relatively minor number of construction HGVs indicates there would need to be significant levels of proposed HGVs in order to result in a severe impact.
St Hugh's Hospital (ATC Site 21) - Section 3	Additional traffic movements (particularly HGV's) during the construction phase	Medium Term Impact – Effects likely to last ~1 year. The flows will fluctuate across the year. As part of the assessment the likely worst case has been assessed to provide a robust assessment of the impacts.	A detailed CTMP will be developed to manage the number of journeys and the routing of traffic away from sensitive locations (if available). The mitigation section above provides an overview of the proposed actions	<b>Not Significant</b> –The proposed routing is already an established haulage route with significant numbers of HGVs as noted in the baseline section above. As such the numbers of proposed HGVs is relatively minor in comparison to existing HGV levels within the area which are currently ~10%	Moderate – The existing high HGV proportions on the link indicate that the link is already heavily used by HGV traffic. Therefore, this combined with a relatively minor number of construction HGVs indicates there would need to be significant levels of proposed

Receptor	Potential Impact	Duration	Mitigation	Likely significance of effect	Confidence in Prediction
			that will be taken to limit the impact.		HGVs in order to result in a severe impact.
Ludborough (ATC Site 27) - Section 3	Additional traffic movements (particularly HGV's) during the construction phase	Medium Term Impact – Effects likely to last ~1 year. The flows will fluctuate across the year. As part of the assessment the likely worst case has been assessed to provide a robust assessment of the impacts.	A detailed CTMP will be developed to manage the number of journeys and the routing of traffic away from sensitive locations (if available). The mitigation section above provides an overview of the proposed actions that will be taken to limit the impact.	<b>Not Significant</b> –The proposed routing is already an established haulage route with significant numbers of HGVs as noted in the baseline section above. As such the numbers of proposed HGVs is relatively minor in comparison to existing HGV levels within the area which are currently ~18%	Moderate – The existing high HGV proportions on the link indicate that the link is already heavily used by HGV traffic. Therefore, this combined with a relatively minor number of construction HGVs indicates there would need to be significant levels of proposed HGVs in order to result in a severe impact.
Fotherby (ATC Site 28) – Section 4	Additional traffic movements (particularly HGV's) during the construction phase	Medium Term Impact – Effects likely to last ~1 year. The flows will fluctuate across the year. As part of the assessment the likely worst case has been assessed to provide a robust assessment of the impacts.	A detailed CTMP will be developed to manage the number of journeys and the routing of traffic away from sensitive locations (if available).. The mitigation section above provides an overview of the proposed actions	<b>Not Significant</b> –The proposed routing is already an established haulage route with significant numbers of HGVs as noted in the baseline section above. As such the numbers of proposed HGVs is relatively minor in comparison to existing HGV levels within the area which are currently ~12%	Moderate – The existing high HGV proportions on the link indicate that the link is already heavily used by HGV traffic. Therefore, this combined with a relatively minor number of construction HGVs indicates there would need to be significant levels of proposed

Receptor	Potential Impact	Duration	Mitigation	Likely significance of effect	Confidence in Prediction
			that will be taken to limit the impact.		HGVs in order to result in a severe impact.
Louth Bypass (ATC Site 29) –Section 4	Additional traffic movements (particularly HGV’s) during the construction phase	Medium Term Impact – Effects likely to last ~1 year. The flows will fluctuate across the year. As part of the assessment the likely worst case has been assessed to provide a robust assessment of the impacts.	A detailed CTMP will be developed to manage the number of journeys and the routing of traffic away from sensitive locations (if available). The mitigation section above provides an overview of the proposed actions that will be taken to limit the impact.	<b>Not Significant</b> –The proposed routing is already an established haulage route with a number of HGVs as noted in the baseline section above. As such the numbers of proposed HGVs is relatively minor in comparison to existing HGV levels within the area which are currently ~6%	Moderate – The existing high HGV proportions on the link indicate that the link is already heavily used by HGV traffic. Therefore, this combined with a relatively minor number of construction HGVs indicates there would need to be significant levels of proposed HGVs in order to result in a severe impact.
Legbourne (ATC Site 31) - Section 5	Additional traffic movements (particularly HGV’s) during the construction phase	Medium Term Impact – Effects likely to last ~1 year. The flows will fluctuate across the year. As part of the assessment the likely worst case has been assessed to provide a robust assessment of the impacts.	A detailed CTMP will be developed to manage the number of journeys and the routing of traffic away from sensitive locations (if available). The mitigation section above provides an overview of the proposed actions	<b>Not Significant</b> –The proposed routing is already an established haulage route with significant numbers of HGVs as noted in the baseline section above. As such the numbers of proposed HGVs is relatively minor in comparison to existing HGV levels within the area which are currently ~10%	Moderate – The existing high HGV proportions on the link indicate that the link is already heavily used by HGV traffic. Therefore, this combined with a relatively minor number of construction HGVs indicates there would need to be significant levels of proposed

Receptor	Potential Impact	Duration	Mitigation	Likely significance of effect	Confidence in Prediction
			that will be taken to limit the impact.		HGVs in order to result in a severe impact.
Local Villages - Withern/Strubby (ATC Site 32) - Section 5	Additional traffic movements (particularly HGV's) during the construction phase	Medium Term Impact – Effects likely to last ~1 year. The flows will fluctuate across the year. As part of the assessment the likely worst case has been assessed to provide a robust assessment of the impacts.	A detailed CTMP will be developed to manage the number of journeys and the routing of traffic away from sensitive locations (if available). The mitigation section above provides an overview of the proposed actions that will be taken to limit the impact.	<b>Not Significant</b> –The proposed routing is already an established haulage route with significant numbers of HGVs as noted in the baseline section above. As such the numbers of proposed HGVs is relatively minor in comparison to existing HGV levels within the area which are currently ~10%	Moderate – The existing high HGV proportions on the link indicate that the link is already heavily used by HGV traffic. Therefore, this combined with a relatively minor number of construction HGVs indicates there would need to be significant levels of proposed HGVs in order to result in a severe impact.
Farms/Local Properties (ATC Site 34) - Section 5	Additional traffic movements (particularly HGV's) during the construction phase	Medium Term Impact – Effects likely to last ~1 year. The flows will fluctuate across the year. As part of the assessment the likely worst case has been assessed to provide a robust assessment of the impacts.	A detailed CTMP will be developed to manage the number of journeys and the routing of traffic away from sensitive locations (if available). The mitigation section above provides an overview of the proposed actions	<b>Not Significant</b> –The proposed routing is already an established haulage route with significant numbers of HGVs as noted in the baseline section above. As such the numbers of proposed HGVs is relatively minor in comparison to existing HGV levels within the area which are currently ~9.2%	Moderate – The existing high HGV proportions on the link indicate that the link is already heavily used by HGV traffic. Therefore, this combined with a relatively minor number of construction HGVs indicates there would need to be significant levels of proposed



Receptor	Potential Impact	Duration	Mitigation	Likely significance of effect	Confidence in Prediction
			that will be taken to limit the impact.		HGVs in order to result in a severe impact.
Caravan Parks/Maltby the Marsh (ATC Site 37) - Section 5	Additional traffic movements (particularly HGV's) during the construction phase	Medium Term Impact – Effects likely to last ~1 year. The flows will fluctuate across the year. As part of the assessment the likely worst case has been assessed to provide a robust assessment of the impacts.	A detailed CTMP will be developed to manage the number of journeys and the routing of traffic away from sensitive locations (if available).. The mitigation section above provides an overview of the proposed actions that will be taken to limit the impact.	<b>Not Significant</b> –The proposed routing is already an established haulage route with significant numbers of HGVs as noted in the baseline section above. As such the numbers of proposed HGVs is relatively minor in comparison to existing HGV levels within the area which are currently ~10.0%	Moderate – The existing high HGV proportions on the link indicate that the link is already heavily used by HGV traffic. Therefore, this combined with a relatively minor number of construction HGVs indicates there would need to be significant levels of proposed HGVs in order to result in a severe impact.
Local Properties (ATC Site 47) - Section 5	Additional traffic movements (particularly HGV's) during the construction phase	Medium Term Impact – Effects likely to last ~1 year. The flows will fluctuate across the year. As part of the assessment the likely worst case has been assessed to provide a robust assessment of the impacts.	A detailed CTMP will be developed to manage the number of journeys and the routing of traffic away from sensitive locations (if available). The mitigation section above provides an overview of the proposed actions	<b>Not Significant</b> –The proposed routing is already an established haulage route with significant numbers of HGVs as noted in the baseline section above. As such the numbers of proposed HGVs is relatively minor in comparison to existing HGV levels within the area which are currently ~14%	Moderate – The existing high HGV proportions on the link indicate that the link is already heavily used by HGV traffic. Therefore, this combined with a relatively minor number of construction HGVs indicates there would need to be significant levels of proposed

Receptor	Potential Impact	Duration	Mitigation	Likely significance of effect	Confidence in Prediction
			that will be taken to limit the impact.		HGVs in order to result in a severe impact.

### Decommissioning phase

- 12.8.8 The decommissioning strategy identified will determine if further assessment is required. Options will include leaving the pipeline in situ and/or dismantling above ground installations. Further assessment will be undertaken within the ES once more details are available.

### Operational Phase

- 12.8.9 It is anticipated that the amount of operational traffic will be negligible, being associated with purely with periodic inspection and maintenance at the Immingan Facility, Theddethorpe Facility and Block Valve Stations. On this basis operational traffic is not considered further in this chapter.

## 12.9 Summary and Next Steps

- 12.9.1 This chapter of the PEIR has considered the potential traffic and transport effects of the Project. It has set out the traffic and transport preliminary assessment methodology, baseline environment and study area, and discusses potential mitigation measures to reduce any significant effects of the Project during the construction period. The assessment has been undertaken in line with the IEA guidelines, with modifications where these will provide greater clarity, such as the consideration of duration.
- 12.9.2 ATCs have been undertaken during a neutral month during 2022, that provide two-way traffic flows classified by vehicle type along the anticipated construction routes serving the Draft Order Limits.
- 12.9.3 The ATCs derive the AADT for individual links, subdivided into 24 hour and 18 hour counts for total traffic and HGVs as part of this preliminary assessment.
- 12.9.4 The trip distribution of workers has been included travelling to and from the construction compounds along the pipeline alignment each day. This has been achieved by development of a simple gravity model. Construction traffic associated with the Project has been distributed onto the local highway network to calculate the resultant percentage increase on each link.
- 12.9.5 This preliminary assessment will progress to the full assessment after the Statutory Consultation to address feedback received and account for additional design information. Discussions with key stakeholders will continue to ensure that the latest position on committed and future developments is known, and to ensure that the full assessment work and accompanying management plans are robust.

## 12.10 References

**Ref 12-1** Overarching National Policy Statement for Energy (EN1). Available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/47854/1938-overarching-nps-for-energy-en1.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/47854/1938-overarching-nps-for-energy-en1.pdf)

**Ref 12-2** Draft Overarching National Policy Statement for Energy (EN1). Available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1015233/en-1-draft-for-consultation.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1015233/en-1-draft-for-consultation.pdf)

**Ref 12-3** National Policy Statement for Oil and Gas Supply and Storage (EN-4). Available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/47857/1941-nps-gas-supply-oil-en4.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/47857/1941-nps-gas-supply-oil-en4.pdf)

**Ref 12-4** Draft National Policy Statement for Oil and Gas Supply and Storage (EN-4). Available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1015237/en-4-draft-for-consultation.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1015237/en-4-draft-for-consultation.pdf)

**Ref 12-5** Energy White Paper. Available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/945899/201216\\_BEIS\\_EWP\\_Command\\_Paper\\_Accessible.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/945899/201216_BEIS_EWP_Command_Paper_Accessible.pdf)

**Ref 12-6** National Planning Policy Framework. Available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1005759/NPPF\\_July\\_2021.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf)

**Ref 12-7** Travel Plans, Transport Assessments and Statements – Planning Practice Guidance (Department for Communities and Local Government, March 2014). Available at: <https://www.gov.uk/guidance/travel-plans-transport-assessments-and-statements>

**Ref 12-8** Institute of Environmental Assessment, (1993); 'Guidelines for the Environmental Assessment of Road Traffic'. London: Institute of Environmental Assessment. Available at: [https://gat04-live-1517c8a4486c41609369c68f30c8-aa81074.divio-media.org/filer\\_public/dc/df/dcdfa287-b475-4fbb-bd4e-a1e96b06be5d/cd71-guideline-for-the-environmental-assessment-of-road-traffic-institute-of-environmental.pdf](https://gat04-live-1517c8a4486c41609369c68f30c8-aa81074.divio-media.org/filer_public/dc/df/dcdfa287-b475-4fbb-bd4e-a1e96b06be5d/cd71-guideline-for-the-environmental-assessment-of-road-traffic-institute-of-environmental.pdf)

**Ref 12-9** Design Manual for Road and Bridges (DMRB). Available at: <https://www.standardsforhighways.co.uk/dmrb/>

**Ref 12-10** (AECOM) V Net Zero Pipeline Project Environmental Impact Assessment - Scoping Report. Available at: [https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN070008/EN070008-000018-V%20Net%20Zero%20Pipeline\\_EIA%20Scoping%20Report.pdf](https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN070008/EN070008-000018-V%20Net%20Zero%20Pipeline_EIA%20Scoping%20Report.pdf)