

Viking CCS Pipeline

**Environmental
Statement Volume IV –
Appendix 12-4:
Transport Assessment**

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1 Introduction

1.1.1 This Transport Assessment (TA) forms **Appendix 12-4** of *ES Volume IV (Application Document 6.4.12.4)*, and has been produced to accompany the application for a Development Consent Order (DCO) for the Viking CCS Pipeline (the Proposed Development).

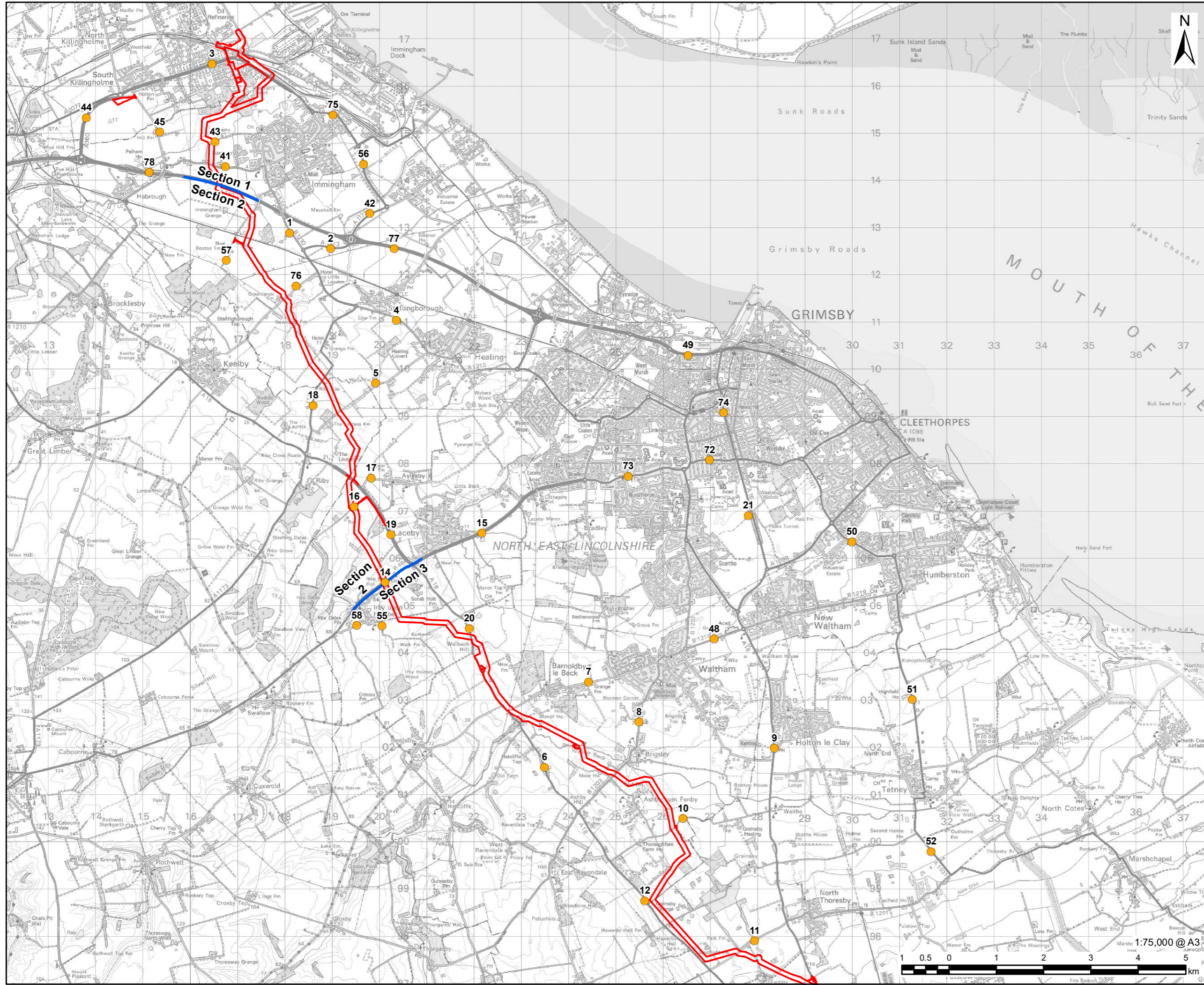
1.1.2 It considers the impact on the local road network during construction of the Proposed Development. Other documents that should be read in conjunction with this TA are:

- Application Document 6.2.12 ES Volume II Chapter 12: Traffic and Transport;
- Application Document 6.4.12.1 ES Volume IV Appendix 12-1 – Transport Baseline Survey data;
- Application Document 6.4.12.2 ES Volume IV Appendix 12-2 – Construction Traffic Flows;
- Application Document 6.4.12.3 ES Volume IV Appendix 12-3 – Construction Traffic Profiles; and
- Application Document 6.4.12.5 ES Volume IV Appendix 12-5 – Draft Construction Traffic Management Plan.

1.1.3 This report only considers the impact of the construction phase of the Proposed Development on traffic on the local highway network. For ease of reporting the route has been split into five separate sections, running north to south, as follows:

- Section 1 – Runs from Immingham to the A180;
- Section 2 – Runs from the A180 to the south of Immingham to the A46, just to the west of the A18 at Laceby;
- Section 3 – Runs from west of Laceby to Pear Tree Lane, to the east of the A18 close to Ludborough;
- Section 4 – Runs from Pear Tree Lane to the B1200 to the east of Manby, and
- Section 5 – Runs from the B1200 to Theddlethorpe.

1.1.4 A location plan is provided below in **Figure 1-1**, which shows the route of the Proposed Development along with the Automatic Traffic Count (ATC) monitoring locations.



LEGEND

- DCO Site Boundary
- Route Section Break
- ATC Location

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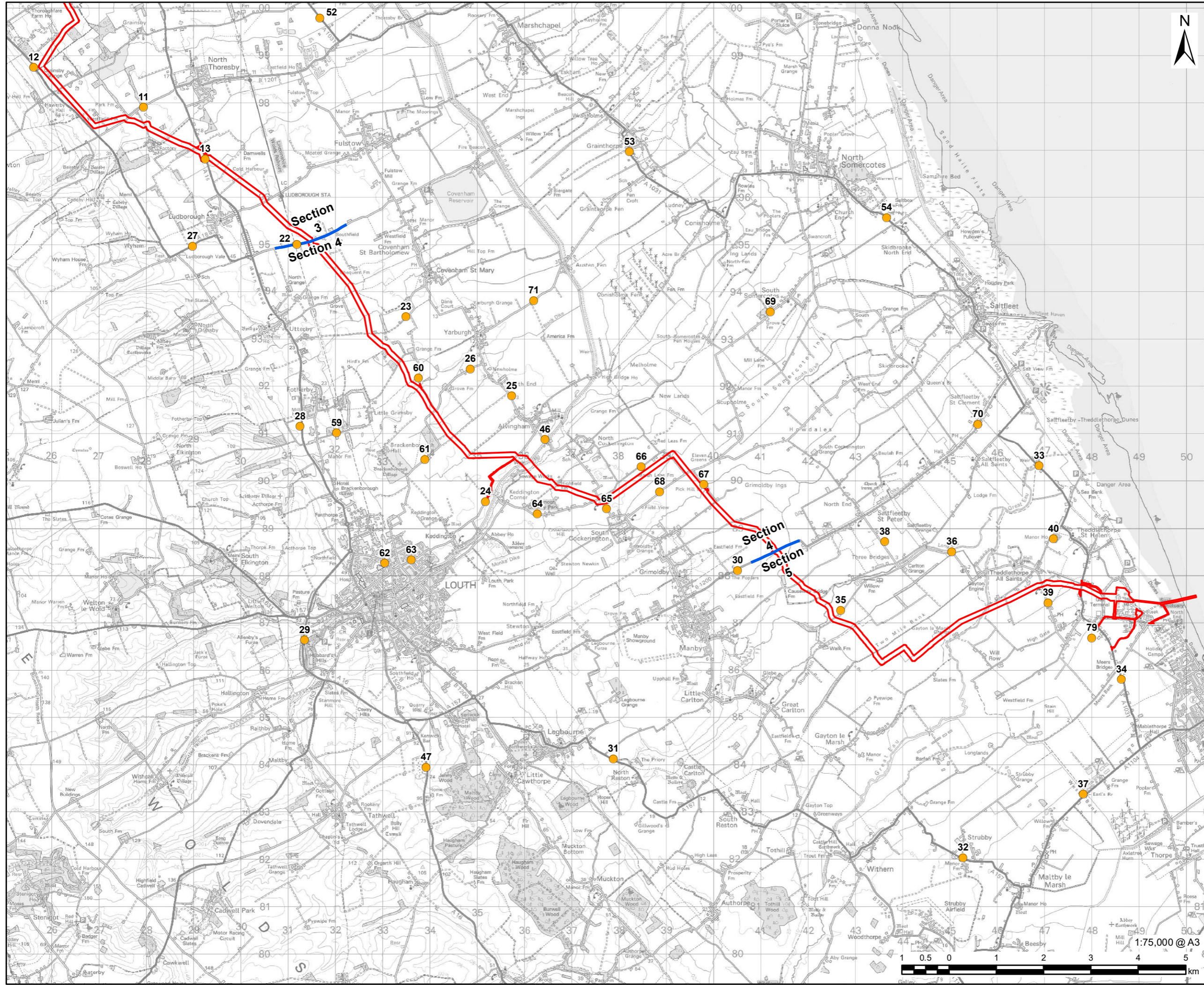


FIGURE TITLE

Figure 1 (1 of 2)

ATC Locations

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LEGEND

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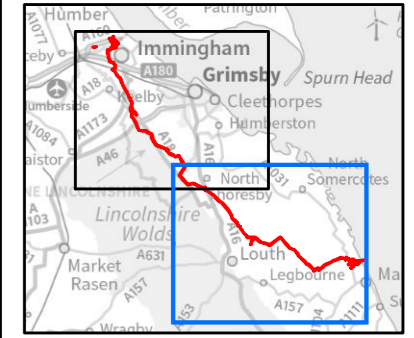


FIGURE TITLE

Figure 1 (2 of 2)

ATC Locations

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1.2 Report Structure

1.2.1 Following this introductory chapter, this Transport Assessment includes the following sections:

- Section 2 – outlines relevant National and Local Policies;
- Section 3 – summarises existing baseline conditions;
- Section 4 – provides details of the Proposed Project;
- Section 5 – details the distribution of the construction traffic;
- Section 6 – details the construction trip generation; and
- Section 7 – summarises the findings and provides an overall conclusion.

2 Transport Policy

2.1 Introduction

2.1.1 This section of the Transport Assessment sets out the policy context, as it relates to traffic and transport, within which the application has been developed. The following documents are considered:

- National Policy Statements;
- National Planning Policy Framework (NPPF) (2023);
- Lincolnshire Local Transport Plan;
- North East Lincolnshire Local Transport Plan; and
- North Lincolnshire Local Transport Plan.

2.2 Policy

National Planning Policy

2.2.1 This assessment takes into consideration the relevant National Policy Statements (NPS), including the drafts published in March 2023, which are matters that will be important to the decision-making process. The relevant NPSs are:

- National Policy Statement Overarching Energy (EN1) (2011) and (2023)
- National Policy Statement for Oil and Gas Supply and Storage (EN4) (2011 and 2023)

2.2.2 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. With regard to traffic and transportation issues, only EN-1 directly applies, with no reference to traffic impact beyond noise and vibration considerations being included within EN-4.

2.2.3 **Table 2-1** outlines the relevant paragraphs from the traffic and transport section of EN-1. An overview of how relevant national planning policy statements has been complied with is provided within the *Planning Statement (Application Document 7.1)*.

Table 2-1: National Policy Statement Policies Relevant to Traffic and Transport

Policy Reference	Policy Context
Overarching National Policy Statement for Energy (EN-1) (2011)	
Paragraph 5.13.3	<i>“If a project is likely to have significant transport implications, the applicant’s ES (see Section 4.2) should include a transport assessment, using the NATA/WebTAG139 methodology stipulated in Department for Transport guidance140, or any successor to such methodology. Applicants should consult the Highways Agency and Highways Authorities as appropriate on the assessment and mitigation”</i>
Paragraph 5.13.4	<i>“Where appropriate, the applicant should prepare a travel plan including demand management measures to mitigate transport impacts. The applicant should also provide details of proposed measures to improve access by public transport, walking and cycling, to reduce the need for parking associated with the proposal and to mitigate transport impacts”</i>
Paragraph 5.13.7	<i>“Provided that the applicant is willing to enter into planning obligations or requirements can be imposed to mitigate transport impacts identified in the NATA/WebTAG transport assessment, with attribution of costs calculated in accordance with the Department for Transport’s guidance, then development consent should not be withheld, and appropriately limited weight should be applied to residual effects on the surrounding transport infrastructure”</i>
Draft Overarching National Policy Statement for Energy (EN-1) (2023)	
Paragraph 5.14.1	<i>“The transport of materials, goods and personnel to and from a development during all project phases can have a variety of impacts on the surrounding transport infrastructure and potentially on connecting transport networks, for example through increased congestion. Impacts may include economic, social and environmental effects”.</i>
Paragraph 5.14.8	<i>“The assessment should also consider any possible disruption to services and infrastructure (such as road, rail and airports)”</i>
Paragraph 5.14.11	<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 5.14.14	<i>“the Secretary of State may attach requirements to a consent where there is likely to be substantial HGV traffic that: control numbers of HGV movements to and from the site in a specified period during its construction and possibly on the routing of such movements; make sufficient provision for HGV parking, 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 ensure satisfactory arrangements for reasonably foreseeable abnormal disruption, in consultation with network providers and the responsible police force.”</i>

Policy Reference	Policy Context
Paragraph 5.14.21	<i>“The Secretary of State should only consider refusing development on highways grounds if there would be an unacceptable impact on highway safety, residual cumulative impacts on the road network would be severe, or it does not show how consideration has been given to the provision of adequate active public or shared transport access and provision”</i>

National Planning Policy Framework

- 2.2.4 The National Planning Policy Framework (NPPF) (**Ref 12-1**) sets out the Government's economic, environmental and social planning policies for England. The policies set out in this framework apply to the preparation of local and neighbourhood plans and to decisions on planning applications. The latest version of NPPF was released in early September 2023.
- 2.2.5 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.
- 2.2.6 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.
- 2.2.7 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.
- 2.2.8 The core planning principles above provide a framework to provide inclusive, accessible, well connected and sustainable development.
- 2.2.9 Extracts from the National Planning Policy Framework 2023 relevant to Traffic and Transport is detailed in **Table 2-2**. An overview of how relevant national planning policy statements has been complied with is provided within the *Planning Statement (Application Document 7.1)*.

Table 2-2: National Planning Policy Framework Policies Relevant to Traffic and Transport

Policy Reference	Policy Context
Paragraph 106	States that planning policies should <i>“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 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>

Policy Reference	Policy Context
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"> <i>• appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;</i> <i>• safe and suitable access to the site can be achieved for all users;</i> <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> <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>
Paragraph 111	<p><i>“Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe”</i></p>
Paragraph 113	<p><i>“All developments that will generate significant amounts of movement should be required to provide a travel plan, and the application should be supported by a transport statement or transport assessment so that the likely impacts of the proposal can be assessed.”</i></p>

Local Policy

2.2.10 The applicable local planning and transport guidelines and policies have been reviewed as part of the assessment. These plans are:

- Central Lincolnshire Local Plan Adopted 2023;
- North East Lincolnshire Local Plan 2013 to 2032;
- Lincolnshire Local Transport Plan (2013/14 – 2022/23);
- North East Lincolnshire Local Transport Plan (2016-2032); and
- North Lincolnshire Transport Plan (2011-2026).

Central Lincolnshire Local Plan Adopted 2023

2.2.11 As it relates to traffic and transport the relevant policies can be as follows.

- Policy S47 – Accessibility and Transport, which requires all development to consider how travel can be minimised, which supports any measures adopted by the Contractor through the DCTMP to limit as far as possible the construction impact.

North East Lincolnshire Local Plan 2013 to 2032

2.2.12 The most recent examination of the Local Plan was adopted in 2018 and in terms of traffic and transport the key policies are.

- Policy 5 – Development boundaries, which as it relates to traffic and transport requires a consideration of access and traffic generation.
- Policy 31 – Renewable and low carbon infrastructure, which as it relates to traffic and transport should consider the effects of highway safety and network capacity.

- Policy 36 – Promoting sustainable transport, which aims to reduce congestion and improve environmental quality. This would then support any measures adopted by the Contractor through the DCTMP to limit as far as possible the construction impact.

Lincolnshire Local Transport Plan

2.2.13 This plan is designed to cover the short, medium, and longer-term time horizons for transport and highways for the whole of Lincolnshire. As part of this plan six key themes have been identified to improve the highway network to increase connectivity and accessibility within the region:

- Supporting Economic Growth;
- Future Ready Green Transport (Climate Change);
- Promoting Thriving Environments;
- Supporting Safety, Security and a Healthy Lifestyle;
- Promoting High Aspirations; and
- Improving the Quality of Life.

North Lincolnshire Local Transport Plan

2.2.14 The North Lincolnshire Local Transport Plan sets out the Vision for 2026 and Local Transport Goals that will shape the future direction of transport in North Lincolnshire over the 15 year LTP3 period between 2016 and 2032. As part of this transport plan several goals have been outlined:

- Facilitate economic growth by targeting transport improvements in key development areas and along key strategic network corridors;
- Reduce transport related carbon dioxide emissions and protect and enhance the natural and built environment through sustainable transport solutions;
- Improve transport safety and security relating to death or injury from transport, in order to contribute towards safer and stronger communities;
- Provide equal opportunities through improvements in accessibility to key local hubs and services by sustainable modes of transport; and
- Enhance people's health and wellbeing through the promotion of healthy modes of travel and provision of a high quality integrated transport system that contributes towards long term sustainable regeneration.

North East Lincolnshire Transport Plan

2.2.15 North East Lincolnshire Council's Local Transport Plan has been developed to support the ongoing growth and economic development aspirations of the Council. A modern, well managed and efficient transport system is a key component that supports the vision for North East Lincolnshire. As part of this plan several key objectives have been identified which can be out as follows:

- Enable sustainable growth through effective transport provision;
- Improve journey times and reliability by reducing congestion;
- Support regeneration and employment by connecting people to education, training and jobs;
- Enable disadvantaged groups or people living in disadvantaged areas to connect with employment, healthcare, social and leisure opportunities;

- Improve the health of individuals by encouraging and enabling more physically active travel;
- Provide safe access and reduce the risk of loss, death or injury due to transport collisions or crime;
- Improve the journey experience on the local transport network; and
- Ensuring that transport contributes to environmental excellence, including managing air quality and reducing transport-related greenhouse gas emissions.

3 Baseline Conditions

3.1 Introduction

3.1.1 This section of the Transport Assessment sets out the location of the Proposed Development and provides a summary of the existing highway conditions relevant to the project, with further, more detailed analysis included within **Appendix 12-1** (*Application Document 6.4.12.1*) and, where appropriate, has been divided into the five route sections as outlined above for ease of reference.

3.2 Local Highway Network

3.2.1 A full description of the highway network within each of the five sections of the Proposed Development is included within **Section 12.6 to 12.10** of *ES Volume II Chapter 12: Traffic and Transport (Application Document 6.2.12)*, with only the key road links set out below.

3.2.2 The Viking CCS Pipeline covers three local highways authorities, namely Lincolnshire County Council, North Lincolnshire Council and North East Lincolnshire Council, as well as National Highways. This section briefly describes the roads within the area, focussing on those proposed as potential construction routes.

3.2.3 A-Roads include the A160, A180, A1173, A18, A1031 and A16, which then provide connections to major settlements within the area, such as Louth, Grimsby, and Immingham and to other roads which in turn connect the area to external destinations such as Hull, Scunthorpe, and Lincoln.

3.2.4 The relevant section of the A180 runs between Brocklesby Interchange and Lockhill Roundabout, just north of Grimsby Town Centre. The section of the A160 listed as a construction route is between Brocklesby Interchange and the roundabout to the east with Manby Road, near to where the Immingham Facility is proposed to be located. The relevant section of the A1173 runs to the east of Immingham continuing to Riby where it meets with the A18. The construction route of the A18 runs southwards to the junction with the A16 south of Ludborough. The A16 construction route runs from Grimsby through to the south of Louth. The construction route on the A1031 runs from just outside of Grimsby, towards the Theddlethorpe Facility.

3.2.5 Other notable roads include smaller roads between the A16 and A1031 just north of Louth. This provides connections between the two roads and passes through small towns such as Little Grimsby, Yarburgh, and South Somercotes.

3.3 Road Safety

3.3.1 A full analysis of the road safety data on the local highway network for the previous five year period has been obtained from the relevant Local Highway Authority, and is included within

Baseline **Sections 12.6 to 12.10** of *ES Volume II Chapter 12: Traffic and Transport (Application Document 6.2.12)*, with only a brief analysis being included within this TA.

Route Section 1 – Immingham to the A180

3.3.2 The Personal Injury Collision (PIC) data within Section 1, can be summarised within Table 3-1 below.

Table 3-1: Section 1 Accident Overview by Year

Year	Slight	Serious	Fatal	Total
2017	13	4	0	17
2018	17	11	0	28
2019	15	9	0	24
2020	12	8	0	20
2021	22	3	0	25
Total	79	35	0	114

3.3.3 **Table 3-1** shows that 2018 was the year with the highest number of accidents, with approximately 60% being classified as slight in severity and the other 40% classified as serious. The year with the lowest number of accidents occurring is 2017, during this year 24% of accidents were classified as serious. No fatal accidents occurred in section 1 during the five-year period analysed.

Route Section 2 –A180 to the south of Immingham to the A46, to the west of the A18 at Laceby;

3.3.4 The PIC data has been analysed and is presented in **Table 3-2**.

Table 3-2: Section 2 Accident Overview by Year

Year	Slight	Serious	Fatal	Total
2017	26	3	2	31
2018	51	11	0	62
2019	52	13	1	66
2020	44	13	1	58
2021	37	12	1	50

3.3.5 **Table 3-2** shows that the highest number of accidents occurred in 2019 and in total there were 267 accidents that occurred within section 2 over the five-year period. Overall, 79% of accidents were classified as slight in severity, 19% classified as serious, and 2% resulted in a fatality.

3.3.6 The year with the highest percentage of serious accidents, compared to total accidents, was 2021 where 24% of accidents were classified as serious. In total, there were 5 fatal accidents across the five-year period, with 2 of these accidents occurring in 2017, and 1 in each year of 2019, 2020, and 2021.

Route Section 3 –West of Laceby to Pear Tree Lane, to the east of the A18 close to Ludborough;

3.3.7 PIC data have been analysed and is presented in Table 3-3.

Table 3-3: Section 3 Accident Overview by Year

Year	Slight	Serious	Fatal	Total
2017	145	47	4	196
2018	266	69	2	337
2019	297	63	2	362
2020	189	56	2	247
2021	205	54	0	259

3.3.8 **Table 3-3** shows that the year with the highest number of accidents was 2019, with 26% of all accidents occurring in this year. The data demonstrates that 79% are classified as slight in severity, 21% as serious, and under 1% as fatal.

3.3.9 Data also shows that 2020 and 2021 have a lower number of accidents, of all types, than 2018 and 2019, potentially suggesting accidents are reducing over time. However, it must be noted that there were ongoing COVID-19 restrictions at the time which could have impacted on traffic volumes.

Route Section 4 –Pear Tree Lane to the B1200 to the east of Manby

3.3.10 PIC data have been analysed and is presented in **Table 3-4**.

Table 3-4: Section 4 Accident Overview by Year

Year	Slight	Serious	Fatal	Total
2017	38	19	0	57
2018	46	11	1	58
2019	52	12	2	66
2020	34	14	0	48
2021	38	16	3	57

3.3.11 **Table 3-4** shows a total of 286 collisions were recorded across the highway network within section 4 across the five-year period, 208 of these collisions were considered slight in severity, 72 were serious, and 6 were fatal. The year with the highest number of collisions was 2019. Data highlights a drop in accidents during 2020, although this could be due to ongoing pandemic restrictions which in many areas reduced traffic flows.

Route Section 5 –B1200 to Theddlethorpe.

3.3.12 PIC data have been analysed and is presented in **Table 3-5**

Table 3-5: Section 5 Accident Overview by Year

Year	Slight	Serious	Fatal	Total
2017	13	6	0	19
2018	12	4	1	17
2019	14	5	0	19
2020	9	6	1	16
2021	9	5	0	14

3.3.13 **Table 3-5** shows that 85 collisions were recorded across the highway network in section 5 in the five-year period between 2017 and 2021. The most collisions happened in 2017 and 2019, with 19 collisions across section 5 in both these years. There were 2 fatal collisions during the time period, with these occurring in 2018 and 2020. Generally, accidents have fallen over time, with 2020 and 2021 having the lowest number of accidents, however, the different travel and traffic patterns in these years, due to pandemic restrictions, must be noted.

3.4 Traffic Data

Baseline Traffic

- 3.4.1 The baseline traffic data are set out in **Appendix 12-1**, and the key points are summarised below.
- 3.4.2 Automated Traffic Counts (ATCs) were undertaken on the following dates to provide one week's worth of traffic data:
- Week commencing 13th July 2022;
 - Week commencing 23rd November 2022, and
 - Week commencing 21st June 2023
- 3.4.3 The surveys undertaken in July 2022 were used to inform the PEIR, with the surveys undertaken in November 2022 and June 2023 undertaken to include additional highway links that were identified post PEIR as the ES chapter was progressed.
- 3.4.4 The baseline traffic flows can then be set out as follows, with a location plan for the ATC sites included as **Figures 1-1 and 1-2** above.

Table 3-6: Baseline 24hr AADT All Vehicles and HGVS

ID	Road Name	All Traffic AADT	HGVs AADT	HGV%
1	B1210	9198	602	7%
2	A1173	5755	631	11%
3	A160	10637	4287	40%
4	Healing Road	5546	443	8%
5	Wells Road	812	92	11%
6	A18	5973	926	16%
7	Waltham Road 1	4776	380	8%
8	Waltham Road 2	2572	203	8%
9	A16	10797	1287	12%
10	Thoroughfare	229	18	8%
11	White Road	1687	263	16%
12	A18	5259	895	17%
13	A16	11384	1421	12%
14	A46	7229	817	11%
15	A46 - Grimsby Road	14885	1449	10%
16	Washingdales lane	111	5	5%
17	Nooking Lane	1347	127	9%
18	A1173	3292	531	16%

ID	Road Name	All Traffic AADT	HGVs AADT	HGV%
19	A18 - Barton Street North	12318	1744	14%
20	A18 - Barton Street South	9892	1304	13%
21	A16 Peaks Parkway	15485	1396	9%
22	Pear Tree Lane	2098	248	12%
23	Ings Lane	274	30	11%
24	Alvingham Road	791	63	8%
25	Yarburgh Road	577	67	12%
26	Westfield Road	536	44	8%
27	A18	3666	640	17%
28	A16	15211	1810	12%
29	Louth Bypass	13812	801	6%
30	B1200 Manby Middlegate	3856	411	11%
31	A157	3799	384	10%
32	A157	2451	239	10%
33	Saltfleet Road	3159	327	10%
34	A1031	4172	385	9%
35	Thacker Bank	181	23	13%
36	Thacker Bank	2044	164	8%
37	Alford Road	6280	570	9%
38	Three Bridge Lane	1892	983	52%
39	Mill Road	2131	198	9%
40	Station Road	169	48	28%
41	Habrough Road	4054	308	8%
42	A1173	7027	1846	26%
43	Mill Lane	102	3	3%
44	A160	12990	5235	40%
45	Killingholme Road	4109	372	9%
46	Lock Road	656	81	12%
47	A16	9355	1292	14%
48	B1219 - Station Road	12351	725	6%
49	A180 - Westgate	28737	1437	5%
50	Grimsby Road	12764	178	1%
51	A1031	4312	56	1%
52	Thoresby Road	2795	35	1%
53	A1031 Main Road	2604	58	2%
54	Warren Road	3033	59	2%
55	Walk Lane	27	2	7%
56	A1173	6468	1271	20%
57	Roxton Road	158	5	3%

ID	Road Name	All Traffic AADT	HGVs AADT	HGV%
58	Old Man Road	149	13	9%
59	Little Grimsby Lane	351	37	11%
60	Brackenborough Road	565	36	6%
61	Brackenborough Road 2	1086	68	6%
62	North Holme Road	13839	952	7%
63	Keddington Road	2880	201	7%
64	Louth Road 1	2087	143	7%
65	Mill Hill Way	2284	191	8%
66	Red Leas Lane	82	8	10%
67	Pick Hill Lane	179	17	9%
68	Marsh Lane	1595	195	12%
69	Louth Road 2	1258	96	8%
70	Main Road	967	83	9%
71	Kings Street	678	48	7%
72	Weelsby Road	20382	1105	5%
73	A46 Laceby Road	17283	1087	6%
74	A16	14927	1242	8%
75	A1173 Manby Road	4689	1244	27%
76	Keelby Road	2146	122	6%
77	A180 - East of A1173	23041	3686	16%
78	A180 - Between A1173 and A160	32013	3067	10%
79	Mablethorpe Road	3033	59	2%

3.4.5 The above have then been used as the basis for the assessment as set out within *ES Volume II Chapter 12: Traffic and Transport (Application Document 6.2.12)*.

Future Baseline

3.4.6 Based upon the above Baseline ATC data from **Table 6**, the future baseline traffic data have been predicted using an average daily traffic growth factor as set out below in **Table 7**.

Table 3-7: TEMPRO Growth Factor

Local Authority	Daily Traffic Flow Growth Factor
East Lyndsey	1.0571
North East Lincolnshire	1.0559
North Lincolnshire	1.0627
Daily Average	1.0585

3.4.7 Therefore, taking the baseline traffic data from **Table 2** and the TEMPRO growth factors from **Table 7** the future baseline traffic can be set out as follows in **Table 8**.

Table 3-8: Future Baseline 24hr AADT All Vehicles and HGVS

ID	Road Name	All Traffic AADT	HGVs AADT	HGV%
1	B1210	9737	637	7%
2	A1173	6092	668	11%
3	A160	11260	4538	40%
4	Healing Road	5871	469	8%
5	Wells Road	860	97	11%
6	A18	6323	980	16%
7	Waltham Road 1	5056	402	8%
8	Waltham Road 2	2723	215	8%
9	A16	11429	1362	12%
10	Thoroughfare	242	19	8%
11	White Road	1786	278	16%
12	A18	5567	947	17%
13	A16	12051	1504	12%
14	A46	7652	865	11%
15	A46 - Grimsby Road	15757	1534	10%
16	Washingdales lane	118	5	5%
17	Nooking Lane	1426	134	9%
18	A1173	3485	562	16%
19	A18 - Barton Street North	13039	1846	14%
20	A18 - Barton Street South	10471	1380	13%
21	A16 Peaks Parkway	16392	1478	9%
22	Pear Tree Lane	2221	263	12%
23	Ings Lane	290	32	11%
24	Alvingham Road	837	67	8%
25	Yarburgh Road	611	71	12%
26	Westfield Road	567	47	8%
27	A18	3881	677	17%
28	A16	16102	1916	12%
29	Louth Bypass	14621	848	6%
30	B1200 Manby Middlegate	4082	435	11%
31	A157	4021	406	10%
32	A157	2595	253	10%
33	Saltfleet Road	3344	346	10%
34	A1031	4416	408	9%
35	Thacker Bank	192	24	13%
36	Thacker Bank	2164	174	8%
37	Alford Road	6648	603	9%
38	Three Bridge Lane	2003	1041	52%

ID	Road Name	All Traffic AADT	HGVs AADT	HGV%
39	Mill Road	2256	210	9%
40	Station Road	179	51	28%
41	Habrough Road	4291	326	8%
42	A1173	7439	1954	26%
43	Mill Lane	108	3	3%
44	A160	13751	5542	40%
45	Killingholme Road	4350	394	9%
46	Lock Road	694	86	12%
47	A16	9903	1368	14%
48	B1219 - Station Road	13074	767	6%
49	A180 - Westgate	30420	1521	5%
50	Grimsby Road	13512	188	1%
51	A1031	4565	59	1%
52	Thoresby Road	2959	37	1%
53	A1031 Main Road	2757	61	2%
54	Warren Road	3211	62	2%
55	Walk Lane	29	2	7%
56	A1173	6847	1345	20%
57	Roxton Road	167	5	3%
58	Old Man Road	158	14	9%
59	Little Grimsby Lane	372	39	11%
60	Brackenborough Road	598	38	6%
61	Brackenborough Road 2	1150	72	6%
62	North Holme Road	14650	1008	7%
63	Keddington Road	3049	213	7%
64	Louth Road 1	2209	151	7%
65	Mill Hill Way	2418	202	8%
66	Red Leas Lane	87	8	10%
67	Pick Hill Lane	189	18	9%
68	Marsh Lane	1688	206	12%
69	Louth Road 2	1332	102	8%
70	Main Road	1024	88	9%
71	Kings Street	718	51	7%
72	Weelsby Road	21576	1170	5%
73	A46 Laceby Road	18295	1151	6%
74	A16	15801	1315	8%
75	A1173 Manby Road	4964	1317	27%
76	Keelby Road	2272	129	6%
77	A180 - East of A1173	24390	3902	16%

ID	Road Name	All Traffic AADT	HGVs AADT	HGV%
78	A180 - Between A1173 and A160	33888	3247	10%
79	Mablethorpe Road	3211	62	2%

3.4.8 The above future baseline traffic data has then been used to determine the impact of the construction traffic flows as set out in *ES Volume II Chapter 12: Traffic and Transport (Application Document 6.2.12)*.

4 Proposed Development

4.1.1 The Viking CCS Pipeline ('the Proposed Development') comprises a new 24" (609 mm) diameter onshore pipeline of approximately 55.5 km in length, which will transport Carbon Dioxide (CO₂) from the Immingham industrial area to the Theddlethorpe area on the Lincolnshire coast, where it will connect into the existing 36" (921 mm) diameter offshore LOGGS pipeline.

4.1.2 The Proposed Development is an integral part of the overall Viking CCS Project, which intends to transport compressed and conditioned CO₂ received at a facility at Immingham to store in depleted gas reservoirs under the Southern North Sea. The offshore elements of the Viking CCS Project, including the transport of CO₂ through the LOGGS pipeline to the Viking gas fields under the North Sea, are subject to a separate consenting process.

4.1.3 The key components of the Proposed Development comprise:

- Immingham Facility;
- Approximately 55.5 km 24 inch (") onshore steel pipeline (including cathodic protection);
- Three Block Valve Stations;
- Theddlethorpe Facility;
- Existing LOGGS pipeline and isolation valve to the extent of the Order Limits at Mean Low Water Springs (MLWS);
- Permanent access to facilities;
- Mitigation and landscaping works;
- Temporary construction compounds, laydown, parking and welfare facilities;
- Temporary access points during construction.

4.1.4 Further details of each element of the Proposed Development are set out in *ES Volume II Chapter 3: Description of the Proposed Development (Application Document 6.2.3)*.

5 Construction Traffic Distribution

5.1.1 With reference to **Section 12.13** of *ES Volume II Chapter 12: Traffic and Transport (Application Document 6.2.12)*, this section provides an overview of the trip distribution and vehicle routing methodology associated with each aspect of the Proposed Development; this includes:

- Construction workers;

- Construction vehicles; and
- Compound setup and delivery.

Construction Worker Distribution

5.1.2 In order to distribute the workers (both transient and those who live in the local area) to each respective access point on the construction route a gravity model has been used, based on distance to and populations of nearby population centres, this includes Grimsby and Cleethorpes, Louth, Hull, Lincoln and Scunthorpe, as these are the main areas of population.

5.1.3 **Table 5-1** Error! Reference source not found. sets out the gravity model and subsequent distribution of workers from each population centre.

Table 5-1: Weighted Worker Distribution

Town	Distribution	Daily Worker Trips One Way	Daily Worker Trips Two-Way	Daily Worker Trips Two-Way 20% Uplift
Grimsby + Cleethorpes	64%	478	955	1,146
Louth	22%	163	327	392
Hull	7%	49	97	177
Lincoln	4%	32	64	77
Scunthorpe	3%	21	43	51
Total	100%	743	1486	1,783

5.1.4 As such the proposed worker numbers have been distributed from the locations above to each respective access point as part of the construction phase.

Construction HGV Distribution

5.1.5 As the exact location of construction materials is currently unknown, it has been assumed that construction HGVs associated with each access point has been individually distributed from the A180 to the north to each access point.

Compound Set Up and Delivery Distribution

5.1.6 The traffic distribution in relation to the setup of each Compound is outlined in **Table 5-2** below.

Table 5-2: Compound Set Up and Delivery Distribution from Immingham

Northern Compound	Central Compound	Southern Compound
A180; and A160	A180; A1173; and A18.	A180; A1173; A18; A46 Grimsby Road; A46 Laceby Road; A1243 Weelsby Road; and

Northern Compound	Central Compound	Southern Compound
		A1031

6 Construction Trip Generation

6.1 Introduction

6.1.1 Due to the nature of the Proposed Development the construction traffic will be comprised of the following elements, each of which will need to be assessed separately:

- Construction vehicles and workers travelling to each of the access points onto the pipeline; and
- Pipeline deliveries from the port of Immingham to the Northern, Central and Southern compounds.

6.1.2 The construction trip generation in line with the above is set out within the following Appendices to the main *ES Volume II Chapter 12: Traffic and Transport (Application Document 6.2.12)*:

- **Appendix 12-2 Construction Traffic Flows**, and
- **Appendix 12-3 Construction Traffic Profiles**.

6.1.3 For the purposes of this TA, the main consideration is the capacity of the highway network rather than any associated environmental effects as these are set out in the ES Chapter 12 Traffic and Transport (*Application Document 6.2.12*).

6.2 Construction Daily Trip Generation

6.2.1 This section summarises the construction worker trip generation, with full details being included in **Appendices 12-2 and 12-3** to the main *ES Volume II Chapter 12: Traffic and Transport (Application Document 6.2.12)*.

6.2.2 With reference to **Table 18 from Appendix 12-3 Construction Traffic Profile**, the daily profile of construction traffic can be given as follows, with workers arriving and departing the hour before and after the working day between 0700 and 1900, and HGVs being distributed evenly throughout the day.

Table 6-1: Combined Worker and Construction Vehicle Arrival and Departure Profile

Hour Beginning	Arrivals	Departures	Two Way
06:00	743	0	743
07:00	25	23	48
08:00	25	23	48
09:00	25	23	48
10:00	25	23	48
11:00	25	23	48
12:00	25	23	48
13:00	25	23	48
14:00	25	23	48
15:00	25	23	48
16:00	25	23	48
17:00	25	23	48
18:00	0	23	23
19:00	0	743	743
20:00	0	0	0
21:00	0	0	0
	1018	1018	2036

- 6.2.3 Therefore, as can be seen the workers will travel outside of the traditional weekday AM and PM peak hours of 0800 to 0900 and 1700 to 1800 respectively, with construction HGVs split evenly throughout the day.
- 6.2.4 The number of construction HGVs is not considered to represent a severe impact upon the highway network, given that it is only around 1 extra HGV per minute spread over the entire network from Immingham to Theddlethorpe.
- 6.2.5 As the construction workers will be travelling outside of the network peak hours any impact upon the capacity of the road network will be greatly reduced due to the reduced levels of baseline traffic at these times.
- 6.2.6 It is therefore not proposed to undertake any capacity assessment of the local highway network, and during the consultation with all highway authorities no concerns regarding the capacity of the highway network at particular junctions has been raised.
- 6.2.7 From **Table 12-21** of *ES Volume II Chapter 12: Traffic and Transport (Application Document 6.2.12)*, the construction traffic distributed onto the network can then be given as follows, and it must be noted that as this is a daily traffic profile over the entire network then there is an element of double counting whereby a construction vehicle will appear on more than one of the road links shown in the following table.

Table 6-2: Total Construction Daily Trip Generation by Link – Construction and Workers

Survey Link	Road Name	All Vehicles	Access HGVS	HGV %
1	B1210	167	30	18%
2	A1173	1155	471	41%

Survey Link	Road Name	All Vehicles	Access HGVS	HGV %
3	A160	237	127	54%
4	Healing Road	0	0	0%
5	Wells Road	0	0	0%
6	A18	593	140	24%
7	Waltham Road 1	0	0	0%
8	Waltham Road 2	0	0	0%
9	A16	815	56	7%
10	Thoroughfare	102	12	12%
11	White Road	162	36	22%
12	A18	536	140	26%
13	A16	631	43	7%
14	A46	191	52	27%
15	A46 - Grimsby Road	304	97	32%
16	Washingdales lane	84	33	39%
17	Nooking Lane	0	0	0%
18	A1173	880	367	42%
19	A18 - Barton Street North	773	319	41%
20	A18 - Barton Street South	736	185	25%
21	A16 Peaks Parkway	815	56	7%
22	Pear Tree Lane	122	43	35%
23	Ings Lane	0	0	0%
24	Alvingham Road	120	38	32%
25	Yarburgh Road	38	38	100%
26	Westfield Road	0	0	0%
27	A18	487	97	20%
28	A16	863	96	11%
29	Louth Bypass	383	88	23%
30	B1200 Manby Middlegate	383	88	23%
31	A157	0	0	0%
32	A157	0	0	0%
33	Saltfleet Road	144	50	34%
34	A1031	0	0	0%
35	Thacker Bank	116	37	32%
36	Thacker Bank	102	0	0%
37	Alford Road	0	0	0%
38	Three Bridge Lane	252	49	19%

Survey Link	Road Name	All Vehicles	Access HGVS	HGV %
39	Mill Road	12	0	0%
40	Station Road	0	0	0%
41	Habrough Road	100	32	32%
42	A1173	97	0	0%
43	Mill Lane	10	0	0%
44	A160	245	127	52%
45	Killingholme Road	60	32	54%
46	Lock Road	0	0	0%
47	A16	0	0	0%
48	B1219 - Station Road	0	0	0%
49	A180 - Westgate	471	91	19%
50	Grimsby Road	212	132	62%
51	A1031	212	132	62%
52	Thoresby Road	212	132	62%
53	A1031 Main Road	212	132	62%
54	Warren Road	174	94	54%
55	Walk Lane	0	0	0%
56	A1173	97	0	0%
57	Roxton Road	0	0	0%
58	Old Man Road	58	0	1%
59	Little Grimsby Lane	95	8	8%
60	Brackenborough Road	56	0	0%
61	Brackenborough Road 2	27	0	0%
62	North Holme Road	273	0	0%
63	Keddington Road	291	0	0%
64	Louth Road 1	195	0	0%
65	Mill Hill Way	122	36	29%
66	Red Leas Lane	30	0	0%
67	Pick Hill Lane	58	0	1%
68	Marsh Lane	123	36	29%
69	Louth Road 2	44	44	100%
70	Main Road	14	0	0%
71	Kings Street	38	38	100%
72	Weelsby Road	280	82	29%
73	A46 Laceby Road	282	82	29%
74	A16	1117	91	8%

Survey Link	Road Name	All Vehicles	Access HGVS	HGV %
75	A1173 Manby Road	97	0	0%
76	Keelby Road	108	32	30%
77	A180 - East of A1173	471	91	19%
78	A180 - Between A1173 and A160	1073	549	51%
79	Mablethorpe Road	144	50	34%

- 6.2.8 It should be noted that the above are two-way daily traffic flows that have then been uplifted by 20% in order to ensure a more robust level of assessment within *ES Volume II Chapter 12: Traffic and Transport (Application Document 6.2.12)*.
- 6.2.9 It should also be noted that the traffic flows are two way, and as such on the A16 within Grimsby, whilst there are 1,117 daily movements, 91 are HGV's leaving 1,026 two-way light vehicle trips, equating to 513 trips travelling outside of the peak hours. However, this is an extremely robust assessment due to 64% of worker trips originating within Grimsby and in reality, these would dissipate over the wider network rather than all stay on the A16.
- 6.2.10 It is therefore considered that given that the construction workers will travel outside of the weekday AM and PM peak hours and that HGVs will be spread evenly throughout the day that the addition of the construction traffic will not be severe and will only be a temporary impact which can be managed to minimise any impact as far as is possible.

7 Construction Impact

- 7.1.1 The impact from the addition of the construction traffic as a percentage increase of baseline traffic flows can then be set out as follows, along with an assessment of the magnitude which then takes account of the duration of any effect, and for ease of reference and consistency with *ES Volume II Chapter 12: Traffic and Transport (Application Document 6.2.12)*, this has been broken down by the five route sections.
- 7.1.2 The magnitude of impact has been based upon the following criteria, and takes account of the duration of any effect, with a very low, low, medium or high magnitude being used to provide a consistency with *ES Volume II Chapter 12: Traffic and Transport (Application Document 6.2.12)*.

Table 7-1: Magnitude Criteria

Impact	Very Low	Low	Medium	High
Construction Traffic	Occasional construction vehicles using roads over a short period of time. <ul style="list-style-type: none"> • Less than 5% Increase for more than 6 months; or • Between 6-30% increase for 3-6 months; or 	Small number of construction vehicles using roads over a short period of time. <ul style="list-style-type: none"> • 6-15% increase for more than 6 months; • 31-39% for 3-6 months; or 	Moderate number of construction vehicles using roads over a protracted time period. <ul style="list-style-type: none"> • 16-39% increase for more than 6 months; or 	High number of construction vehicles using roads over a protracted period of time. <ul style="list-style-type: none"> • More than a 40% increase for more than 6 months.

Impact	Very Low	Low	Medium	High
	<ul style="list-style-type: none"> Between 31-40% for less than 3 months. 	<ul style="list-style-type: none"> >40% increase for less than 3 months. 	<ul style="list-style-type: none"> More than 40% increase for 3-6 months. 	

7.1.3 Note that where percentage increases are substantially greater than 40% professional judgement has been applied to adjust the final magnitude.

7.1.4 The assessment of the five route sections is set out below.

Route Section 1

7.1.5 The increase in traffic flow as a percentage impact of baseline traffic flows within route section 1 is given below.

Table 7-2: Section 1 - Construction Daily Impact

Survey Link	Road Name	Baseline		Construction		Impact		Magnitude of impact
		All Vehicles	HGVs	All Vehicles	HGVs	All Vehicle increase	HGV increase	
3	A160	11260	4538	237	127	2%	3%	Very Low
41	Habrough Road	4291	326	100	32	2%	10%	Low
42	A1173	7439	1954	97	0	1%	0%	Very Low
43	Mill Lane	108	3	10	0	9%	0%	Low
44	A160	13751	5542	245	127	2%	2%	Very Low
45	Killingholme Road	4350	394	60	32	1%	8%	Low
56	A1173	6847	1345	97	0	1%	0%	Very Low
75	A1173 Manby Road	4964	1317	97	0	2%	0%	Very Low

7.1.6 With reference to the above table, it can be seen that the percentage impact within route section 1 is either low or very low, and therefore is not considered to result in any severe impact upon daily traffic flows.

Route Section 2

7.1.7 The increase in traffic flow as a percentage impact of baseline traffic flows within route section 2 is given below.

Table 7-3: Section 2 - Construction Daily Impact

Survey Link	Road Name	Baseline		Construction		Impact		Magnitude of impact
		All Vehicles	HGVs	All Vehicles	HGVs	All Vehicle increase	HGV increase	
1	B1210	9737	637	167	30	2%	5%	Very Low
2	A1173	6092	668	1155	471	19%	71%	High
4	Healing Road	5871	469	0	0	0%	0%	Very Low
5	Wells Road	860	97	0	0	0%	0%	Very Low
14	A46	7652	865	191	52	2%	6%	Low
16	Washingdales Lane	118	5	84	33	71%	660%	High
17	Nooking Lane	1426	134	0	0	0%	0%	Very Low
18	A1173	3485	562	880	367	25%	65%	High
19	A18 - Barton Street North	13039	1846	773	319	6%	17%	Medium
49	A180 - Westgate	30420	1521	471	91	2%	6%	Low
57	Roxton Road	167	5	0	0	0%	0%	Very Low
76	Keelby Road	2272	129	108	32	5%	25%	Medium
78	A180 - Between A1173 and A160	33888	3247	1073	549	3%	17%	Medium

- 7.1.8 With reference to the above table, it can be seen that the largest percentage impact in terms of daily traffic is on Washingdales Lane, which is located to the west of the A18 at Laceby, and from the baseline only has 5 HGVs per day, with the construction phase adding 33 HGVs per day which is only around 3 per hour throughout day and as such is not considered to be severe.
- 7.1.9 Other links with high percentage impacts are the A1173 adjacent to the junction with the A180 (link 2) and the A1173 to the east of Keelby Link 18) with a 71% and 65% increase in HGVs respectively. The actual increase in HGVS per day is 471 and 367 which equates to around 40 and 30 HGVS per hour on links 2 and 18 respectively. However, the A1173 is strategic route within the local area and as such around 1 additional HGV every 2 minutes is again not considered to be severe, would only occur during the construction phase and would be managed through the CTMP.

Route Section 3

- 7.1.10 The increase in traffic flow as a percentage impact of baseline traffic flows within route section 3 is given below.

Table 7-4: Section 3 - Construction Daily Impact

Survey Link	Road Name	Baseline		Construction		Impact		Magnitude of Impact
		All Vehicles	HGVs	All Vehicles	HGVs	All Vehicle increase	HGV increase	
6	A18	6323	980	593	140	9%	14%	Low
7	Waltham Road 1	5056	402	0	0	0%	0%	Very Low
8	Waltham Road 2	2723	215	0	0	0%	0%	Very Low
9	A16	11429	1362	816	56	7%	4%	Low
10	Thoroughfare	242	19	102	12	42%	63%	High
11	White Road	1786	278	162	36	9%	13%	Low
12	A18	5567	947	536	140	10%	15%	Low
13	A16	12051	1504	631	43	5%	3%	Very Low
15	A46 - Grimsby Road	15757	1534	304	97	2%	6%	Low
20	A18 - Barton Street South	10471	1380	736	185	7%	13%	Low
21	A16 Peaks Parkway	16392	1478	816	56	5%	4%	Very Low
22	Pear Tree Lane	2221	263	122	43	5%	16%	Medium
27	A18	3881	677	487	97	13%	14%	Low
48	B1219 - Station Road	13074	767	0	0	0%	0%	Very Low
50	Grimsby Road	13512	188	212	132	2%	70%	High

Survey Link	Road Name	Baseline		Construction		Impact		Magnitude of Impact
		All Vehicles	HGVs	All Vehicles	HGVs	All Vehicle increase	HGV increase	
51	A1031	4565	59	212	132	5%	224%	High
52	Thoresby Road	2959	37	212	132	7%	357%	High
55	Walk Lane	29	2	0	0	0%	0%	Very Low
58	Old Man Road	158	14	58	0	36%	0%	Medium
72	Weelsby Road	21576	1170	279	82	1%	7%	Low
73	A46 Laceby Road	18295	1151	281	82	2%	7%	Low
74	A16	15801	1315	1116	91	7%	7%	Low

7.1.11 With reference to the above table, the largest percentage increases in daily traffic are on the A1031 around Tetney (Links 51 and 52) with 224% on link 51 and 357% on link 52) and the A1031 at Humberstone (Link 50) with an increase of 70%.

7.1.12 However, for Links 51 and 52, the percentage increase is due to the relatively low baseline number of HGVs with 59 on link 51 and 37 on link 52. During the construction phase, there is predicted to be 132 HGVS per day along all of these links, which equates to around 11 per hour, which is approximately 1 additional HGV every 5 minutes, which is not considered to be severe, and is only a temporary impact during the construction phase and would be managed through the CTMP.

Route Section 4

7.1.13 The increase in traffic flow as a percentage impact of baseline traffic flows within route section 4 is given below.

Table 7-5: Section 4 - Construction Daily Impact

Survey Link	Road Name	Baseline		Construction		Impact		Magnitude of Impact
		All Vehicles	HGVs	All Vehicles	HGVs	All Vehicle increase	HGV increase	
23	Ings Lane	290	32	0	0	0%	0%	Very Low
24	Alvingham Road	837	67	120	38	14%	57%	High
25	Yarburgh Road	611	71	38	38	6%	54%	High
26	Westfield Road	567	47	0	0	0%	0%	Very Low
28	A16	16102	1916	863	96	5%	5%	Very Low
29	Louth Bypass	14621	848	383	88	3%	10%	Low
46	Lock Road	694	86	0	0	0%	0%	Very Low
53	A1031 Main Road	2757	61	212	132	8%	216%	High
54	Warren Road	3211	62	174	94	5%	152%	High
59	Little Grimsby Lane	372	39	96	8	26%	21%	Medium
60	Brackenborough Road	598	38	56	0	9%	0%	Low
61	Brackenborough Road 2	1150	72	27	0	2%	0%	Very Low
62	North Holme Road	14650	1008	273	0	2%	0%	Very Low
63	Keddington Road	3049	213	291	0	10%	0%	Low
64	Louth Road 1	2209	151	195	0	9%	0%	Low
65	Mill Hill Way	2418	202	123	36	5%	18%	Medium
66	Red Leas Lane	87	8	30	0	34%	0%	Medium
67	Pick Hill Lane	189	18	58	0	30%	0%	Medium
68	Marsh Lane	1688	206	123	36	7%	17%	Medium
69	Louth Road 2	1332	102	44	44	3%	43%	High
70	Main Road	1024	88	14	0	1%	0%	Very Low
71	Kings Street	718	51	38	38	5%	75%	High

7.1.14 With reference to the above table, the largest percentage increases are on the A1013 Main Road (Link 53) at Grainthorpe and Warren Road (Link 54) which is the A1031 at North Somercotes with an increase of 216% and 152% respectively. However, the increase in actual HGVs per day is 132 and 94 on links 53 and 54 respectively, which equates to approximately 11 additional HGVs per hour on Link 53 and 8 additional HGVs per hour HGVs on Link 54, which is not considered to be severe.

Route Section 5

7.1.15 The increase in traffic flow as a percentage impact of baseline traffic flows within route section 5 is given below:

Table 7-6: Section 5 - Construction Daily Impact

Survey Link	Road Name	Baseline		Construction		Impact		Magnitude of Impact
		All Vehicles	HGVs	All Vehicles	HGVs	All Vehicle increase	HGV increase	
30	B1200 Manby Middlegate	4082	435	383	88	9%	20%	Medium
31	A157	4021	406	0	0	0%	0%	Very Low
32	A157	2595	253	0	0	0%	0%	Very Low
33	Saltfleet Road	3344	346	144	50	4%	14%	Low
34	A1031	4416	408	0	0	0%	0%	Very Low
35	Thacker Bank	192	24	116	37	61%	154%	High
36	Thacker Bank	2164	174	102	0	5%	0%	Very Low
37	Alford Road	6648	603	0	0	0%	0%	Very Low
38	Three Bridge Lane	2003	1041	252	49	13%	5%	Low
39	Mill Road	2256	210	12	0	1%	0%	Very Low
40	Station Road	179	51	0	0	0%	0%	Very Low
47	A16	9903	1368	0	0	0%	0%	Very Low
79	Mablethorpe Road	3211	62	144	50	4%	81%	High

7.1.16 With reference to the above table it can be seen that the impact from the additional, temporary, construction traffic is only considered to be high on Thacker Bank (Link 35) and Mablethorpe Road (Link 79) with an increase of 154% and 84% respectively. However, the number of additional HGV movements is only 37 per day on Thacker Bank and 50 per day on Mablethorpe Road, which is not considered to be a severe impact, with the percentage increase being due to the relatively low baseline flows.

8 Mitigation

8.1.1 As set out in **Section 12.16** of *ES Volume II Chapter 12: Traffic and Transport (Application Document 6.2.12)*, a Draft Construction Traffic Management Plan (DCTMP) has been provided as included as **Appendix 12.5** and includes the following items:

- Relevant legislation.
- The construction methodology and outline of the local road network and the key roads to be used during the construction phase, including traffic Signage requirements and working hours,
- Details of the pipeline transportation, and storage including the location of the three pipe dumps and how the construction phase will progress.
- Details of the works vehicles including personnel transport for the workforce, LGVs, HGVs, light plant and heavy plant, and
- Traffic movements and details around the methodology for calculating the construction traffic.

8.1.2 The aim of the CTMP will be to manage the construction traffic as far as is possible so as to minimise any impact, and it should be restated that the assessments within this Transport Assessment provide a worst case as no allowance has been made for either car sharing or the use of mini buses by construction workers.

8.1.3 A CTMP is an industry standard method of managing the construction impact and a final document will be prepared by the Contractor and agreed with all relevant Highways Authorities prior to the start of construction.

9 Summary

9.1.1 Overall, the impact of the construction traffic is not anticipated to be severe within the AM and PM peak and across the working data which is considered to be within normal daily traffic variation and, as such, no traffic modelling is required to further understand the impact. A Contractor's CTMP will be implemented on site, based on the DCTMP included as Appendix 12.5 (*Application Document 6.4.12.5*), to limit vehicles to certain routes and to limit any such impact of the construction traffic on the highway network as far as is possible.

