



Immingham Green Energy Terminal

TR030008

Volume 6

6.2 Environmental Statement

Chapter 11: Traffic & Transport

Planning Act 2008

Regulation 5(2)(a)

Infrastructure Planning (Applications: Prescribed
Forms and Procedure) Regulations 2009 (as
amended)

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Immingham Green Energy Terminal

Development Consent Order 2023

6.2 Environmental Statement

Chapter 11: Traffic & Transport

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Table of contents

Chapter	Pages
Table of contents	3
11 Traffic and Transport	11-1
11.1 Introduction	11-1
11.2 Consultation and Engagement	11-2
11.3 Legislation, Policy and Guidance	11-21
11.4 Assessment Methodology	11-24
11.5 Study Area	11-29
11.6 Baseline Conditions.....	11-30
11.7 Development Design and Impact Avoidance.....	11-36
11.8 Trip Distribution, Generation and Assignment.....	11-37
11.9 Assessment of Likely Impacts and Effects	11-49
11.10 Mitigation and Enhancement Measures	11-58
11.11 Cumulative Effects	11-58
11.12 Assessment of Residual Effects.....	11-58
11.13 Summary of Assessment	11-58
11.14 References.....	11-62

Tables

Table 11-1: Consultation Summary Table.....	11-3
Table 11-2: Relevant Legislation, Policy and Guidance Regarding Traffic and Transport 11-21	11-21
Table 11-3: Link Sensitivity Categorisation	11-25
Table 11-4: Magnitude of Impact Criteria.....	11-27
Table 11-5: Significance of Effects Matrix.....	11-29
Table 11-6: Traffic Collision Data Analysis	11-32
Table 11-7: 2021 Baseline AADT Traffic Flows	11-33
Table 11-8: Traffic Growth Factor	11-35
Table 11-9: 2026 Baseline AADT Traffic Flows	11-35
Table 11-10: Total Daily Construction Traffic – Peak of Construction.....	11-38
Table 11-11: Construction Site Traffic Split between the West and East Sites	11-39
Table 11-12: Daily Construction Traffic by Site (Two-Way)	11-39
Table 11-13: Construction Worker Traffic Daily Profile	11-40
Table 11-14: HGV Traffic Daily Profile.....	11-41
Table 11-15: Construction Worker Distribution	11-42
Table 11-16: Construction Worker Traffic Distribution	11-43
Table 11-17: Construction Worker Daily Traffic Distribution (Two-Way) Landside Only ...	11-43
Table 11-18: Construction Worker Weekday Peak Traffic	11-44
Table 11-19: HGV Distribution	11-45
Table 11-20: HGV Daily Distribution	11-45
Table 11-21: Construction Trip Assignment – Peak of Project Construction.....	11-46
Table 11-22: Total Daily Operational Traffic	11-48

Table 11-23: Operational Worker Distribution.....	11-48
Table 11-24: 2026 Base + Peak of Construction Daily Two-Way Flows	11-49
Table 11-25: Magnitude of Impact	11-54
Table 11-26: Classification of Traffic and Transport Effects (during Peak Construction year 2026).....	11-56
Table 11-27: Summary of Impacts, Mitigation Measures and Effects/Residual Effects during construction.....	11-59

11 Traffic and Transport

11.1 Introduction

- 11.1.1 This chapter of the Environmental Statement (“ES”) addresses the likely significant effects of the Project on traffic and transport receptors during construction in respect of landside traffic and transport effects. Marine transport and navigation effects are considered within **Chapter 12: Marine Transport and Navigation [TR030008/APP/6.2]**. The assessment considers the following:
- The present day and future baseline conditions during construction.
 - The effects of construction traffic on the local road network including the strategic road network as a result of the Project in terms of the increase in overall vehicle numbers, including Heavy Goods Vehicles (“HGVs”).
- 11.1.2 The operational phase is anticipated to employ 120 workers in total for the terminal and the hydrogen production facility, of which 53 will be onsite during the normal working day with a further 67 working shift patterns. There are also anticipated to be an average of around 96 two-way daily HGV movements (48 inbound and 48 outbound) associated with the operational hydrogen production facility. The operational impacts of the Project have therefore been scoped out of the traffic and transport assessment given the low volumes of traffic generated and that significant effects are unlikely to arise.
- 11.1.3 The decommissioning effects of landside traffic and transport are also scoped out of the Environmental Impact Assessment (“EIA”) based on an agreement on this through the Scoping Opinion (see **Table 11-1**) and given the commitment to deliver a Decommissioning Environmental Management Plan (“DEMP”) which will be secured through a requirement of the draft Development Consent Order (“DCO”).
- 11.1.4 The interrelationships between the potential effects of the Project on traffic and transport and other disciplines are addressed in the following chapters **[TR030008/APP/6.2]**:
- Chapter 6: Air Quality
 - Chapter 7: Noise and Vibration
- 11.1.5 This chapter is supported by the following figures **[TR030008/APP/6.3]** and appendices **[TR030008/APP/6.4]**:
- Figure 11.1: Study Location**
 - Figure 11.2: Local Highway Network**
 - Figure 11.3: Public Right of Way (“PRoW”) Network**
 - Figure 11.4: Collision Locations**
 - Appendix 11.A: Traffic Collision Data**
 - Appendix 11.B: Traffic and Transport Cumulative Effects Assessment**

11.2 Consultation and Engagement

- 11.2.1 An EIA scoping exercise was undertaken in August 2022 to establish the form and nature of the traffic and transport assessment, and the approach and methods to be followed. The Scoping Report (**Appendix 1.A [TR030008/APP/6.4]**) records the findings of the scoping exercise and details the technical guidance, standards, best practice and criteria being applied in the assessment to identify and evaluate the likely significant effects of the Project on traffic and transport. A Scoping Opinion was adopted by the Secretary of State on 10 October 2022 (**Appendix 1.B [TR030008/APP/6.4]**).
- 11.2.2 The first Statutory Consultation took place between 9 January and 20 February 2023 in accordance with the *Planning Act 2008* (“2008 Act”). The Applicant prepared a Preliminary Environmental Information Report (“PEI Report”), which was publicised at the consultation stage.
- 11.2.3 Through consideration of the responses to the first Statutory Consultation, the developing environmental assessments and through ongoing design-development and assessment, a series of changes within the Project were identified. A second Statutory Consultation took place between 24 May and 20 July 2023 in accordance with the 2008 Act and a PEI Report Addendum was publicised to inform the consultation. The PEI Report Addendum provides updated details of the HGV movements associated with the construction of the Project as well as the proposed reduction to 30mph to the speed limit on Laporte Road.
- 11.2.4 The consultation undertaken with statutory consultees to inform this chapter, including a summary of comments raised via the formal Scoping Opinion (**Appendix 1.B [TR030008/APP/6.4]**) and in response to the formal consultation and other pre-application engagement, is summarised in **Table 11-1**.

Table 11-1: Consultation Summary Table

Reference/Date	Consultee	Summary of Response	Response
Scoping Report August 2022	Planning Inspectorate	The Scoping Report proposes that no assessment of the decommissioning aspect of the Proposed Development be undertaken because the number of vehicles and the future baseline cannot be predicted at this time, and any assessment would not be accurate. Subject to the provision of the Outline Decommissioning Plan secured within the DCO, the Inspectorate agrees to scope out this matter from the ES.	Noted. The draft DCO includes a requirement to provide a Decommissioning Environmental Management Plan in accordance with an Outline DEMP [TR030008/APP/6.6] .
	Planning Inspectorate	The ES should provide robust justification for the study area, supported with figures where necessary to show the extent of the affected road network (“ARN”) considered and any agreement regarding the approach with relevant consultation bodies.	Noted. The study area is set out within Section 11.5 and shows the Affected Road Network. It was discussed and agreed with North East Lincolnshire Council (“NELC”) (during a meeting on 2 February 2023). Through consideration of the responses to Statutory Consultations, the developing environmental assessments and through ongoing design development, the design of the Project has evolved and a number of refinements and modifications have been made. There have therefore been small changes to the Site Boundary.
	Planning Inspectorate	The Automated Traffic Counts (“ATCs”) and Manual Classified Counts (“MCCs”) surveys should be clearly explained and justified as part of the methodology used to determine likely effects. The proposed ATC/ MCC locations should be included	Noted. The details of the baseline traffic data are included within Section 11.6 , with the extent of the study area having been agreed

Reference/Date	Consultee	Summary of Response	Response
		in the ES, supported by figures which clearly identify these and the locations should be agreed on with the relevant consultation bodies, where possible.	in the NELC response to the EIA Scoping Report.
Scoping Report August 2022	Royal Mail	Every day in exercising its statutory duties Royal Mail vehicles use all of the main roads that may potentially be affected by the proposed Immingham Green Terminal (“IGT”). Any periods of road disruption/closure, night or day, on or to the roads immediately connected to the IGT or the surrounding highway network will have the potential to impact operations and may consequently disrupt Royal Mail’s ability to meet its Universal Obligation service delivery targets.	<p>The routing of construction vehicles will be managed through the implementation of the Outline Construction Traffic Management Plan (“OCTMP”) [TR030008/APP/6.7] and which is to be secured by DCO Requirement with the Final CTMP being agreed with the NELC prior to construction commencing on site.</p> <p>There would be some localised highway works to Kings Road, Queens Road and Laporte Road associated with culvert works, utilities connections and protective works and the creation of site entrances. These works would be undertaken using powers included within the draft DCO. Liaison would be undertaken with NELC for all works in the highway. Any road closures (for example for the construction of Work No. 4 on Laporte Road) would be managed and agreed with the Local Highway Authority, with suitable diversion routes being available, e.g. via Kiln</p>

Reference/Date	Consultee	Summary of Response	Response
			<p>Lane. No significant disruption is expected.</p> <p>All construction traffic would be routed via the Strategic Road Network with no construction traffic routed through the town of Immingham. No adverse traffic effects are expected on the town of Immingham.</p>
Scoping Report August 2022	North East Lincolnshire Council (Highways)	Content with the scope of the traffic and transport assessment.	No response required.
Scoping Report August 2022	East Lindsey District Council	No comments on the Scoping Report.	No response required.
PEI Report January 2023	Anglian Water	<p>The traffic and transport chapter should include the impacts of HGV and plant during construction and operation on buried utilities including Anglian water's pipelines. Alternatively, this could be included in Chapter 22: Major Accidents and Disasters or Chapter 23: Socio-Economics or Chapter 24: Human Health to ensure that consideration is given to impacts on residents and business from distribution of water and water recycling services caused by an increased frequency of traffic movements on buried infrastructure. Water supply network assets for example run along Kings Road, Queens Road and the southern boundary of the site.</p>	<p>No damage to Anglian Water infrastructure (or indeed any buried utilities) is predicted. Anglian Water infrastructure (primarily pipelines) is generally buried in the highway and will not be damaged by traffic movements and are not covered in this chapter.</p> <p>The Utilities Statement [TR030008/APP/7.7] provides a summary of the approaches taken to utility connections, diversions and protections, including to Anglian Water assets. Table 4-3 and Table 4-4 in the Utilities</p>

Reference/Date	Consultee	Summary of Response	Response
			<p>Statement [TR030008/APP/7.7] specifically cover the Anglian Water Assets that have been identified and require protection. The exact details of the protection are to be agreed with Anglian Water.</p> <p>Protective Provisions in favour of Anglian Water, which include the protection of existing assets, are proposed within the draft DCO [TR030008/APP/2.1].</p>
<p>PEI Report January 2023</p>	<p>Network Rail</p>	<p>In respect of the works adjacent to the operational railway boundary including the compound, we will be keen to ensure that there are sufficient boundary treatments in place (appropriate fencing and Armco barriers) to prevent trespass and vehicle incursion onto the operational railway line. The routing of construction traffic (including HGVs/abnormal loads) and subsequent operational site traffic will require further consideration and discussion with Network Rail (“NR”) if such routes take in railway assets, such as bridges (with low clearance/weight restrictions) and railway level crossings. At this stage the information supplied is not sufficiently detailed to fully assess potential impacts of the scheme on the railway.</p> <p>In order to ensure that the scheme does not impact on operational railway safety, the developer must liaise closely with Network Rail Asset Protection to ensure that the haulage routes into the site are appropriate, and the design and construction of the new facility and associated infrastructure will not have an adverse impact on railway operations. It is therefore assumed that a condition of the Order would be that</p>	<p>The Project's main interaction with railway infrastructure is the bridge on Queens Road over the railway line, which is not signed as having any traffic or weight restrictions. It is currently assumed that the primary routing for construction HGV traffic is to be via the A1173 to the Temporary Construction Area on Laporte Road (Work No. 9), so avoiding the railway bridge.</p> <p>An OCTMP [TR030008/APP/6.7] accompanies the application and the final version is to be secured by DCO Requirement. The OCTMP sets out measures to control construction traffic from the commencement of construction with a final detailed CTMP will be</p>

Reference/Date	Consultee	Summary of Response	Response
		<p>detailed specifications of the proposed scheme and traffic management plans are to be provided and agreed in writing before development can commence.</p>	<p>produced prior to the commencement of construction and will be prepared in accordance with the OCTMP [TR030008/APP/6.7].</p> <p>With regards boundary treatments, the Final CTMP will assess and identify if any additional barrier protection is required at the Queens Road railway bridge to minimise risk of vehicle incursion onto the railway.</p> <p>During the construction phase, NR will be fully consulted by the contractor to ensure that all works comply with any relevant guidance regarding working in close proximity to a live railway, and any measures put in place will be kept to the required standard for the full duration of the works.</p>
<p>PEI Report January 2023</p>	<p>West Lindsey District Council</p>	<p>West Lindsey District Council in principle supports renewable energy development and the reduction of the local and national carbon footprint. The western edge of the Terminal would be approx. Three miles to the east of the nearest West Lindsey District boundary. Given the distances, it is unlikely that the development would have any significant material impact on West Lindsey or its residents. The primary consideration would be the impact of the construction, operation and decommissioning phases on the local highway network if traffic was to be directed through parts of West Lindsey. Chapter 11</p>	<p>No HGV traffic is proposed to be routed through West Lindsey District, with the majority of workers (80%) assumed to be distributed within North East Lincolnshire. The traffic generation and distribution is set out within Section 11.7.</p>

Reference/Date	Consultee	Summary of Response	Response
		<p>of the PEI Report does not mention West Lindsey or any of its main highway routes. West Lindsey would request that its highway network is considered in any future traffic and transport assessments even if this is to clarify that its highway network would not be utilised. It would be recommended that the Highways Authority at Lincolnshire County Council is consulted for comment.</p>	<p>The main traffic impact would be within North East Lincolnshire, with HGVs using the strategic road network (“SRN”) (M180) and then the A1173. It is assumed that both construction and operational workers would primarily reside in Immingham and Grimsby.</p>
<p>PEI Report January 2023</p>	<p>North East Lincolnshire Council</p>	<p>The proposed project will attract a reasonable number of associated vehicle movements in relation to the development but it is likely that the most significant impact of the development will come through the construction phase. Various meetings have taken place with the applicants, North East Lincs Highways Authority to look at such impacts and the management of the construction phase. The Highway Authority look forward to the full and final Transport Assessment being submitted and will continue to work with the applicants to resolve any highway concerns throughout the process.</p>	<p>This chapter considers the impact of the Project, and an assessment of the vehicle movements associated with the construction phase is presented within Section 11.9.</p> <p>A separate Transport Assessment has not been prepared as the full details of trip generation and distribution for both the construction and operational phases are included within Section 11.7.</p> <p>The operational phase is only expected to generate 96 two-way HGV movements per day (48 arrivals and 48 departures) with a total of 120 staff anticipated to be employed, of which 67 would work on a shift pattern and 53 would travel in the “normal” weekday AM and PM peak periods. This chapter includes an assessment of the</p>

Reference/Date	Consultee	Summary of Response	Response
			construction traffic associated with the Project on the local road network to assess the transport impact during this phase.
PEI Report January 2023	Polynt Composites	<p>We have significant concerns around the traffic and transport impacts of the IGET Project during both the construction and operational phases of the scheme. The data on these impacts that accompanies the consultation information identifies significant increases in vehicle movements on the surrounding highway network, particularly on Kings Road and Queens Road and the junction of the latter with Laporte Road. This is already a very busy route during rush hour, with queueing traffic waiting to access the docks from Queens Road and Laporte Road. Laporte Road is the only access to our Plant, with traffic (and our employees) approaching via Queens Road or Kiln Lane/Hobson Way. A significant increase in traffic here will cause excessive congestion and queues that would impact on our Laporte Road access, causing issues for employees and deliveries in and out of site. To confirm, 34,000 tonnes of raw materials and finished products arrive, or leave the site per annum by road.</p> <p>Increased traffic will comprise a considerable number of HGV movements. As noted, Laporte Road is a very busy highway being the main access point to the docks at its junction with Queens Road. The proposed access point to the temporary construction compound is c. 200 yards from the entrance to our Plant. We have many HGVs making deliveries to the Plant daily. With no middle right hand turning lane, and limited space at the entrance to our Plant, there are already occasions when the traffic has needed to queue to access the site, leading to a number of near misses in the past with HGV's waiting to gain</p>	<p>The impact of the traffic during both the construction and operational phases is set out in this chapter. A number of HGVs would need to access the Temporary Construction Area (Work No. 9) at the northern end of Laporte Road but would then be routed along Queens Road and Kings Road to use the A1173 to access the wider highway network via the A180. In terms of construction workers and employees, only those residing within Grimsby are forecast to use Laporte Road.</p> <p>Through the adoption of a final detailed Construction Traffic Management Plan ("CTMP") based on the OCTMP [TR030008/APP/6.7], the chosen contractor would be required to liaise closely with all local businesses to inform them of any peaks in activity so that this can be managed.</p>

Reference/Date	Consultee	Summary of Response	Response
		<p>entry. Increased traffic flow during construction phase of the IGET Project has the potential to exacerbate this problem and it is not unforeseeable that the queues from the junction (Laporte and Queens Road) during rush hour could back up to the Plant entrance, restricting access for deliveries, employees and visitors. It is unclear whether any investigation of the potential to use the port to deliver construction materials etc. necessary to deliver the scheme has been explored as an alternative measure to reduce vehicle movements on the local highway network.</p>	<p>The construction compound access points and all site entrances have been designed to ensure adequate separation from existing junctions and appropriate sight lines, so that any queueing on the road network is minimised and avoided wherever possible.</p> <p>There would be some localised highway works to Kings Road, Queens Road and Laporte Road associated with culvert works, utilities connections and protective works and the creation of site entrances. These works would be undertaken using powers included within the draft DCO. Liaison would be undertaken with NELC for all works in the highway. Any road closures (for example for the construction of Work No. 4 on Laporte Road) would be managed and agreed with the Local Highway Authority, with suitable diversion routes being available, e.g. via Kiln Lane. No significant disruption is expected.</p> <p>It is anticipated that much of the construction materials and components associated with the construction of the marine works would be delivered by sea to the</p>

Reference/Date	Consultee	Summary of Response	Response
			Port of Immingham, and then taken to site using the A1173 Kings Road. This is also likely to be the case for large, prefabricated elements and large operational plant associated with the hydrogen production facility.
PEI Report January 2023	Royal Mail	<p>Royal Mail has operational properties within 12 miles of the proposed works:</p> <ul style="list-style-type: none"> • BE 2701, Immingham DO – c. 1.1 miles north-west; • BE 2834, Grimsby DO – c. 5 miles south-east; • BE2708, Grimsby RTW – c. 5 miles south-east; • BE 2713, Barton upon Humber DO- c. 11.5 miles north-west; <p>and BE 3211, Barton Antelope Road PAR- c. 11.5 miles north-west</p> <p>The PEIR sets out that the following roads on the highway network may be used and therefore potentially affected by the proposed scheme:</p> <ul style="list-style-type: none"> • A1173; • A160; • A180; • M180; and • Local roads. <p>The PEIR states “the main approach to mitigating potential traffic impacts would be the use of management measures to reduce as far as is possible the number of vehicle trips on the local highway network”. Royal Mail notes a Construction Traffic Management Plan (“CTMP”) and a Construction Worker Travel Plan (“CWTP”) will be prepared and submitted as part of the</p>	<p>Through the adoption of a final detailed CTMP based on the OCTMP [TR030008/APP/6.7], the chosen contractor would be required to liaise closely with all local businesses to inform them of any peaks in activity so that this can be managed.</p> <p>The construction compound access points and all site entrances have been designed to ensure adequate separation from existing junctions and appropriate sight lines, so that any queueing on the road network is minimised and avoided wherever possible.</p> <p>There would be some localised highway works to Kings Road, Queens Road and Laporte Road associated with culvert works, utilities connections and protective works and the creation of site entrances.</p>

Reference/Date	Consultee	Summary of Response	Response
		<p>DCO application, and prior to the construction phase of the scheme. The PEIR NTS states the CTMP would be prepared to “control Heavy Goods Vehicle Movements” and the CWTP “to control the trips made by construction workers (including encouraging car sharing) and thus reduce the impact of the workforce upon the highway network.” Specifically, these Plans would “set out measures and controls to limit the number of trips on the network in peak hours, and as such would aim to limit the traffic impact of the construction phase as far as possible”.</p> <p>Every day, in exercising its statutory duties Royal Mail vehicles use all of the main roads that may potentially be affected by the proposed IGET. Any periods of road disruption / closure, night or day, on or to the roads immediately connected to the IGET or the surrounding highway network will have the potential to impact operations and may consequently disrupt Royal Mail’s ability to meet its Universal Obligation service delivery targets. These obligations are in the public interest and should not be affected detrimentally by any statutorily authorised project. Accordingly, Royal Mail seeks to take all reasonable steps to protect its assets and operational interests from any potentially adverse impacts of the proposed development. In order to protect Royal Mail’s position, it is requested that wording is added to the future Construction Transport Management Plan (CTMP) to secure the following mitigations:</p> <p>The CTMP includes specific requirements that during the construction phase, Royal Mail is notified by Associated British Ports or its contractors at least one month in advance on any proposed road closures/diversions/alternative access arrangements, hours of working;</p>	<p>These works would be undertaken using powers included within the draft DCO. Liaison would be undertaken with NELC for all works in the highway.</p> <p>NELC would be fully consulted in regard to any temporary road closures (for example for the construction of Work No. 4 on Laporte Road)</p> <p>The OCTMP [TR030008/APP/6.7] includes a requirement for the contractor to provide at least one months notice to all local businesses regarding any works that would affect the local road network such as road works or road closures.</p>

Reference/Date	Consultee	Summary of Response	Response
		<p>Where road closures/diversions are proposed, Associated British Ports or its contractors liaise with Royal Mail at least one month in advance to identify and make available alternative highway routes for operational use, where possible; and</p> <p>The CTMP includes a mechanism that informs Royal Mail about works affecting the local highways network (with particular regard to Royal Mail's distribution facilities near the proposed works, as identified above)</p>	
PEI Report January 2023	Local Resident (living within approx. 10km of the Project)	HGVs in Immingham are a large problem. The local road; Kings Road through to Queens Road and the dock road are in a bad state of repair, so an increased load of traffic will only compound this issue. I believe that something should be done regarding HGVs and using this route.	A road condition survey will be undertaken to determine the existing condition of the road prior to the start of construction works. If the condition is altered due to the works, appropriate measures would be put in place to remediate any defects. The details of this would be included within the detailed CTMP based on the OCTMP [TR030008/APP/6.7] .
PEI Report January 2023	Local Resident (living within approx. 10km of the Project)	Proposed tanker entrance onto busy A1173 – why not the quieter Queens Road?	The approach to site accesses has been determined by both the construction requirements and the proposed layout of the Project. New junctions have all been designed to the required standard to ensure safe operation and would be agreed with the Local Highway Authority.

Reference/Date	Consultee	Summary of Response	Response
PEI Report January 2023	Local Resident (living within approx. 10km of the Project)	Concern for the use of the roads during construction.	Table 11-25 provides an assessment of the impact of vehicle movements during construction, and it concluded that the effects on the road network would not be significant based on 70% of HGVs travelling to the West Site only..
PEI Report January 2023	DFDS Seaways	The hydrogen produced as outlined in the IGET is going to be taken away from the facility by road tanker which will create a cumulative effect along with the traffic issues of the IERRT and other IGET traffic (e.g. during construction). 2,200 additional HGVs are expected to use the East Gate for IERRT. We have expressed our concerns that the mitigation measures for the IERRT are insufficient, and we disagree with the statement in the IGET PEIR that these mitigation effects will reduce effects on a transport network to a level which is not significant; instead it will have unacceptable impacts on port users as well as local residents and businesses. Another 195 HGV movements a day during construction and 98 HGV movements a day during operation of the IGET will exacerbate this further and no additional mitigation has been proposed.	An assessment of the cumulative impact has been undertaken within Chapter 25: Cumulative and In-Combination Effects [TR030008/APP/6.2] and the environmental effects as they relate to traffic and transport are not significant.
Second Statutory Consultation May 2023 – July 2023	West Lindsey District Council	The western edge of the Terminal would be approximately 3 miles to the east of the nearest West Lindsey District boundary. Given the distances it is unlikely that the development would have any significant material impact on West Lindsey or its residents. West Lindsey's primary consideration would be the impact of the construction, operation and decommissioning phases on the local highway network if traffic was to be directed through	No HGV traffic is proposed to be routed through West Lindsey District, with the majority of workers (80%) assumed to be distributed within North East Lincolnshire. The traffic generation and distribution is set out within Section 11.7.

Reference/Date	Consultee	Summary of Response	Response
		parts of West Lindsey. West Lindsey would request that its highway network is considered in any future traffic and transport assessments even if this is to clarify that its highway network would not be utilised. It would be recommended that the Highways Authority at Lincolnshire County Council is consulted for comment.	The main traffic impact would be within North East Lincolnshire, with HGVs using the SRN (M180) and then the A1173. It is assumed that both construction and operational workers would primarily reside in Immingham and Grimsby.
	National Highways	<p>This review has considered a Preliminary Environmental Information Report (PEIR) which was originally published in January 2023, and the PEIR Addendum, submitted by Associated British Ports in relation to the construction of a multi-user liquid bulk jetty named the Immingham Green Energy Terminal.</p> <p>The request is made pursuant to Regulation 13 of the Infrastructure Planning (Environmental Impact Assessment) Regulation 2017.</p> <p>A summary of our comments is set out below:</p> <p>The forthcoming DCO application should be accompanied by a TA;</p> <p>The traffic generation associated with both the Construction and Operational Phase be fully and robustly set out in the TA; The Applicant will need to provide an hourly break-down of the traffic to be generated and depending on the number of vehicular trips during the AM and PM peak-hours, trip distribution and assignment graphs might also need to be submitted for review;</p> <p>With regards to the operation of the SRN, it is important that the potential impact of the development be established at the</p>	<p>A TA has not been prepared as set out in ES.</p> <p>The traffic generation associated with the construction and operational phase is set out in Table 11-10 and Table 11-22 respectively, with an hourly breakdown of the construction traffic shown in Table 11-13 and Table 11-14.</p> <p>The distribution of construction traffic shown in Table 11-16 and Table 11-18 respectively, with the operational impact upon the strategic road network shown in Table 11-23.</p> <p>Circular 01/2022 – The Strategic Road Network and The Delivery of Sustainable Development; and - National Highways’ guidance document ‘The Strategic Road Network: Planning for The Future</p>

Reference/Date	Consultee	Summary of Response	Response
		<p>A180 / A1173 junction, and elsewhere on the SRN where traffic generation is considered to result in the material impact;</p> <p>The Applicant should consider the following documentation and guidance when preparing the TA: - Circular 01/2022 – The Strategic Road Network and The Delivery of Sustainable Development; and - National Highways’ guidance document ‘The Strategic Road Network: Planning for The Future.’;</p> <p>The TA should include a collision data analysis covering the most recently available complete five-year period for the SRN, including the A180 / A1173 junction and elsewhere on the SRN where traffic generation is considered to result in the material impact; however it is not acceptable to use 2020 and 2021 data for the analysis because the traffic flows during these years were materially influenced by the Covid-19 pandemic;</p> <p>In terms of assessing the cumulative effects, the following development should also be considered alongside the current Immingham Green Energy Terminal application, within the ES and requested TA: Station Road South Killingholme, works on land to the east of Rosper Road, Killingholme (planning reference: PA/SCO/2022/7);</p> <p>National Highways supports and requires the preparation and implementation of Travel Plans to limit the volume of private vehicle trips to and from developments and to promote sustainable modes of travel;</p> <p>A CTMP should be prepared and be a condition of a planning consent. It will need to be submitted and approved in writing by National Highways prior to the commencement of construction. The CTMP will need to include at least:</p> <p>a dust management plan</p>	<p>and been considered within Table 11-2.</p> <p>Section 11.6 includes a review of the relevant collision data between 2017 and 2022, and whilst the data from 2020 and 2021 may not be necessarily reflective of “normal” operating conditions, the use of data prior to 2017 is not considered to be necessarily relevant as it would at least 6 years old and may not then reflect current operating conditions.</p> <p>The cumulative effects have been included within Chapter 25: Cumulative Effects and In-Combination Assessment.</p> <p>An OCTMP and Outline Construction Worker Travel Plan (“OCWTP”) [TR030008/APP/6.7] have been prepared and they include the items listed, with the dust, noise and pollution controls being covered in the Outline Construction Environmental Management Plan [TR030008/APP/6.5].</p>

Reference/Date	Consultee	Summary of Response	Response
		<p>a noise management plan</p> <p>pollution prevention measures</p> <p>staffing numbers</p> <p>contractor parking</p> <p>construction traffic routes</p> <p>details of delivery arrangements (including for any abnormal loads)</p> <p>measures to limit and manage transfer of debris on to the highway</p>	
	DFDS Seaways	<p>Traffic and Transport</p> <p>Traffic and Transport</p> <p>The hydrogen produced as outlined in the IGET is going to be taken away from the facility by road tanker which will create a cumulative effect along with the traffic issues of the IERRT and other IGET traffic (e.g. during construction).</p> <p>2,200 additional HGVs per day are expected to use the East Gate for IERRT. We have expressed our concerns that the mitigation measures for the IERRT are insufficient, and we disagree with the statement in the IGET PEIR that these mitigation effects will reduce effects on a transport network to a level which is not significant; instead it will have unacceptable impacts on port users as well as local residents and businesses. One of the changes made by ABP to the IGET proposal in this consultation is to revise upwards the number of HGV movements from 195 HGV movements a day during construction to 260 movements per day at the peak of construction and remain at 98 HGV movements a day during</p>	<p>The number of construction HGVs as set out in Table 11-10 is 196 per day two way, which with reference to Table 11-14 is around 19 per hour two way (ten arrivals and nine departures). This is then one additional HGV every three minutes on average, which is not considered to be severe, and is in any case only a temporary impact.</p> <p>During the operational phase there will be around 96 HGVs per day which, with reference Paragraph 11.8.11, equates to four per hour two way (two arrivals and two departures), which is around one HGV every 15 minutes, which is not considered to be severe.</p>

Reference/Date	Consultee	Summary of Response	Response
		<p>operation of the IGET. We were previously concerned that the 194 HGV movements a day had not been considered fully. No doubt this increase to 260 HGV movements a day will further exacerbate the traffic and all its unwelcome impacts, without any additional mitigation being proposed.</p> <p>Our argument that the impacts of these additional HGV movement during construction have not been assessed properly are bolstered by Table 7.2 – Preliminary Environmental Information: Implications of the Proposed Changes by Topic of the PEIR Addendum. The column for “Re-assessment of significant effects” says the following in relation to the topics of Air Quality, Noise and Vibration and Nature Conservation (Terrestrial Ecology) as a result of the increase in HGV movements:</p> <p>The summary reported in the PEI Report is unchanged. However the residual effects will be confirmed after reassessment within the ES</p> <p>This shows that adequate assessment, especially when considered cumulatively with the IERRT, has not yet been carried out.</p> <p>The PEIR addendum considered the IERRT in relation to Changes No 2 and 3 but does not consider the cumulative effect of the IERRT in relation to Change number 5: Construction Vehicle Numbers and still fails to consider cumulative effects in relation other safety issues such as increased marine traffic near the IOT trunkway or reduced tug availability.</p>	<p>The Air Quality, Noise and Vibration and Nature Conservation (Terrestrial Ecology) impacts are set out with Chapter 6: Air Quality, Chapter 7: Noise and Vibration and Chapter 8: Nature Conservation (Terrestrial Ecology) [TR030008/APP/6.2] respectively, with a cumulative assessment of the traffic and transport impact being included within Chapter 25: Cumulative and In-Combination Effects.</p> <p>The above construction impact has been assessed as it relates to traffic and transport within this chapter and is set out in Table 11-25 with the impacts being considered either negligible or minor and therefore not significant.</p>
	Royal Mail	It is noted that the revised DCO boundary as shown in the Second Statutory consultation plan ref GH-2015660 includes	The works to the A1173 Kings Road are in relation to allowing Abnormal Loads to access the

Reference/Date	Consultee	Summary of Response	Response
		<p>four sections of the A1173 Kings Road, presumably for road works to improve traffic capacity.</p> <p>It is emphasised that Immingham Delivery Office (location shown with a red arrow above) takes access from the A1173 via Middleplatt Road and thus any disruption to this route during works may impact on Royal Mail's operations to and from Immingham Delivery Office.</p> <p>Royal Mail does not wish to stop or delay the IGET works from occurring. However, Royal Mail does wish to ensure the protection of its future ability to provide an efficient mail sorting and delivering service to the public from and to the above identified operational facilities in accordance with its statutory obligations.</p> <p>In order to protect Royal Mail's position, it is requested that wording is added to the future Construction Transport Management Plan ("CTMP") to secure the following mitigations:</p> <ol style="list-style-type: none"> 1. the CTMP includes specific requirements that during the construction phase Royal Mail is notified by Associated British Ports or its contractors at least one month in advance on any proposed road closures / diversions / alternative access arrangements, hours of working; 2. where road closures / diversions are proposed, Associated British Ports or its contractors liaise with Royal Mail at least one month in advance to identify and make available alternative highway routes for operational use, where possible; and 3. the CTMP includes a mechanism that informs Royal Mail about works affecting the local highways network (with 	<p>project from Immingham Docks and relate to the removal of overhead lines and relatively minor amendments to street furniture, and therefore any disruption would be of a short duration.</p> <p>The CTMP already includes a section about consulting any affected third parties in relation to road works, with a one month period already being included, as set out in section 6 of the CTMP.</p>

Reference/Date	Consultee	Summary of Response	Response
		particular regard to Royal Mail's distribution facilities near the proposed works, as identified above).	

11.3 Legislation, Policy and Guidance

11.3.1 **Table 11-2** presents the legislation, policy and guidance relevant to the traffic and transport assessment and details how they have been addressed within this assessment.

Table 11-2: Relevant Legislation, Policy and Guidance Regarding Traffic and Transport

Legislation/Policy/Guidance	Consideration within this chapter
Guidelines for the Environmental Assessment of Road Traffic 1993 (“GEART”) (Ref 11-1)	
<p>Sets out the assessment methodology for road traffic assessments. The main consideration being the two rule approach used to assess the extent of any assessment:</p> <ul style="list-style-type: none"> • Rule 1 – include highway links where traffic flows will increase by more than 30% (or the number of heavy goods vehicles will increase by more than 30%). • Rule 2 – include any other specific sensitive areas where traffic flows have increased by 10% or more. 	<p>The thresholds set out within the guidelines have been used as the basis for the traffic and transport impact assessment, as set out in Section 11.8.</p>
National Policy Statement for Ports (“NPSfP”) (2012) (Ref 11-3)	
<p>The NPSfP is a framework to address proposals for port development in the UK and associated development (rail and road). This describes the UK Government’s conclusions on new port infrastructure in the context of future demand, needs and the current economy.</p> <p>Paragraph 5.4.4 states that the assessment should distinguish between the construction, operation and decommissioning project stages as appropriate.</p> <p>Paragraph 5.4.5 states that, where appropriate, a travel plan, including demand management measures to mitigate transport impacts, should be prepared.</p> <p>Paragraph 5.4.8 states that transport assessment should include private traffic accessing and leaving the port, where significant, even where not generated by the development under application.</p>	<p>The NPSfP requirements have been considered within this traffic and transport assessment.</p> <p>The three project stages (construction, operation and decommissioning) defined have been considered and the extent of the study area has been scoped with NELC as explained in Section 11.4.</p> <p>An OCTMP and an OCWTP [TR030008/APP/6.7] have been prepared to mitigate the construction impact of both HGVs and construction workers respectively.</p> <p>The assessment includes baseline traffic collected in 2021 along with a full consideration of cumulative developments as set out in Chapter 25: Cumulative Effects and In-Combination Assessment [TR030008/APP/6.2] and presented in Appendix 11.B [TR030008/APP/6.4].</p>
National Planning Policy Framework (“NPPF”) (2021) (Ref 11-2)	
<p>NPPF paragraph 111 states: <i>“Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on</i></p>	<p>The NPPF requirements have been considered within this traffic and transport assessment, and</p>

Legislation/Policy/Guidance	Consideration within this chapter
<p><i>highway safety, or the residual cumulative impacts on the road network would be severe.</i></p> <p>This policy sets out the guidance in relation to the impact of developments and when they should be refused.</p>	<p>the impacts are considered to be either minor or negligible, and not significant (see Table 11-26)</p>
<p>Planning Practice Guidance – Travel Plans, Transport Assessments and Statements (2014) (Ref 11-4)</p>	
<p>This Planning Practice Guidance provides general guidelines for travel plans, transport assessments and statements.</p>	<p>The guidance has been taken into account when defining the traffic and transport assessment methodology applied, as well as the measures to be included within the OCWTP [TR030008/APP/6.7].</p>
<p>Department for Transport (“DfT”) Circular 01/2022: Strategic Road Network and the Delivery of Sustainable Development (2022) (Ref 11-5)</p>	
<p>Published in December 2022 by the DfT which sets out the way in which National Highways will engage with the development industry to deliver sustainable development and, thus, economic growth, whilst safeguarding the primary function and purpose of the strategic road network.</p>	<p>The guidance has been considered in terms of the impact upon the Strategic Road Network and the production of the OCTMP and OCWTP [TR030008/APP/6.7], based upon previous experience of working with National Highways on similar type of project.</p>
<p>National Highways’ guidance document ‘The Strategic Road Network: Planning for The Future.;</p>	
<p>Published by Highways England (now National Highways) and aims to describe the approach taken by NH when engaging with the planning system and is written in the context of the statutory responsibilities and Government policy as set out in NPPF and DfT Circular 02/2022.</p>	<p>The guidance has been considered in the preparation of this chapter, with the traffic impact during both the construction and operational phases being set out within Section 11.3 and mitigation through the production of the OCTMP and OCWTP [TR030008/APP/6.7], based upon previous experience of working with National Highways on similar type of project.</p>
<p>Design Manual for Road and Bridges (“DMRB”) CD 123 Geometric design of at-grade priority and signal-controlled junctions (Ref 11-6)</p>	
<p>Outlines the geometric parameters in relation to the design of new junctions.</p>	<p>These design standards have been taken into account in the design of new junction arrangements for the site entrances required by the Project.</p>
<p>North East Lincolnshire Local Plan 2013 to 2032 (adopted 2018) (Ref 11-7)</p>	
<p>Strategic Objective 7 considers transport around North East Lincolnshire which states “<i>Improve accessibility to jobs and services by sustainable transport modes, including cycling and walking; reduce the overall need to travel with employment and housing growth spatially balanced; and, provide</i></p>	<p>To promote sustainability during the construction phase, an OCTMP and an OCWTP [TR030008/APP/6.7] have been prepared and are included in the DCO application.</p>

Legislation/Policy/Guidance	Consideration within this chapter
<p><i>necessary infrastructure to support sustainable growth.”</i></p> <p>Policy 36 Promoting sustainable transport, states that the overall aim is “<i>To reduce congestion, improve environmental quality and encourage more active and healthy lifestyles, the Council will support measures that promote more sustainable transport choices</i>”</p> <p><i>“Planning permission will be granted where any development that is expected to have significant transport implications delivers necessary and cost effective mitigation measures to ensure that development has an acceptable impact on the network’s functioning and safety. These measures shall be secured through conditions and/or legal agreements.”</i></p>	

Limitations and Assumptions

- 11.3.2 The information presented in this assessment reflects that obtained and evaluated at the time of reporting and is based on the maximum extent of land required for construction and operation of the Project.
- 11.3.3 The baseline traffic data used for the assessment is based on secondary data from surveys undertaken on behalf of ABP as part of the Immingham Eastern Ro-Ro Terminal (“IERRT”) proposed development, as well as Automated Traffic Counts (“ATCs”) undertaken on Laporte Road in the week commencing 5 January 2023. The data used for the IERRT proposals was recorded by way of survey undertaken in 2021 and reported in the David Tucker Associates Preliminary Transport Assessment (Ref 11-9).
- 11.3.4 In relation to the HGV distribution, it is assumed that all construction vehicles would travel to and from the Site via the A1173 towards the A180 where they are distributed, based upon the pattern of movements that existing HGVs currently make. No HGV movements for the Project have been distributed through the residential areas of Immingham to the north to avoid travelling past the residential properties located on the A1173, with the A180 providing access to both Immingham and Grimsby Ports.
- 11.3.5 It has been assumed that the construction traffic is split between the west and east sites as follows:
- a. Construction workers – 80% in the West Site and 20% in the East Site
 - b. Construction HGVs – 70% to the West Site and 30% to the East Site
- 11.3.6 As discussed in **Chapter 5: EIA Approach [TR030008/APP/6.2]**, a Rochdale Envelope approach is being used to ensure that the ES assesses the likely significant effects of the Project. The traffic and transport construction assessment has been based on the assumption of a peak of construction activity occurring in Month 23, which would be towards the end of 2026. The results

presented in this assessment are representative of earlier assessment years and the overall effect of the Project may be less than that presented, as background traffic is expected to increase year on year. It is considered that a worst-case scenario has been assessed in line with the Rochdale Envelope approach.

11.4 Assessment Methodology

Scope of Assessment

- 11.4.1 The assessment scenario considered in this chapter relates solely to the construction phase which commences in early 2025 with a peak of construction in Month 23 in late 2026. This therefore represents a worst case as the number of construction workers will vary and reduce over the period of construction.
- 11.4.2 As explained in **Section 11.1**, during operation of the Terminal and the hydrogen production facility, traffic levels would be low. The number of HGVs expected to access the Site during the operational phase is 48 per day in and out (96 two-way) and these would be associated with the hydrogen production facility. The number of worker vehicles is estimated at 53 per day in and out (106 two-way). Based on this volume of traffic, the levels are below the screening threshold for the assessment of highway links, i.e. where traffic flows will increase by more than 30% as outlined in the GEART (Ref 11-1). Therefore, in accordance with the approach set out in the Scoping Report (**Appendix 1.A [TR030008/APP/6.4]**), which was to review the need for assessment of operational traffic once further details of likely traffic levels were available, an assessment of the operational effects of the Project is scoped out.
- 11.4.3 Having regard to the information presented within the Scoping Report (**Appendix 1.A [TR030008/APP/6.4]**), the Planning Inspectorate's Scoping Opinion (**Appendix 1.B [TR030008/APP/6.4]**) has confirmed the Applicant's view that significant traffic and transport effects during Project decommissioning are unlikely, assuming that a DEMP is secured via the DCO. Accordingly, this matter has been scoped out of the assessment.
- 11.4.4 This assessment therefore focusses on potential construction traffic effects, both from construction workers accessing the Site and HGV deliveries required during the construction phase.

Assessment of Significance

- 11.4.5 The GEART (Ref 11-1) includes guidance on how the sensitivity of receptors should be assessed. **Table 11-3** provides an overview of how the sensitivity of receptors close to or using transport links has been assessed based on that guidance.

Table 11-3: Link Sensitivity Categorisation

Receptors	Built Environment Indicator along Highway Link	Highway Link Sensitivity to Changes in Traffic Flow
People at home	Residential Properties	<p>Medium:</p> <p>Where there are a number of properties with direct frontage to the highway link being used as a construction route.</p>
		<p>Low:</p> <p>Where there are few properties with direct frontage to the highway link being used as a construction traffic route.</p>
People in workplaces	Offices, industrial units, employment uses	<p>Low:</p> <p>Employment users therefore no residential impact, could already have HGV traffic.</p>
Sensitive groups (children, elderly and disabled)	Schools, play areas, care/retirement homes, disabled parking bays	<p>High:</p> <p>Where there are multiple indicators of sensitive groups with direct frontage onto the highway link being used as a construction traffic route</p>
		<p>Medium:</p> <p>Where one indicator of sensitive groups is present with direct frontage onto the highway link being used as a construction traffic route</p>
		<p>Low:</p> <p>Where no indicators of sensitive groups are present</p>
Sensitive locations (hospitals, places of worship, schools, historic buildings)	Hospitals, places of worship, schools, historic buildings	<p>High:</p> <p>Where there are multiple indicators of sensitive locations</p>
		<p>Medium:</p> <p>Where one indicator of a sensitive location is present</p>
		<p>Low:</p>

Receptors	Built Environment Indicator along Highway Link	Highway Link Sensitivity to Changes in Traffic Flow
		Where no indicators of sensitive locations are present
People walking	Footways, PRow, crossings	Medium: Indicators present on highway link
		Low: Indicators not present on highway link
People cycling	On/off-road designated cycle routes	Medium: On-road designated cycle routes present along highway link
		Low: Off-road designated cycle routes present along highway link
Open spaces, recreational sites, shopping areas	Parks, play areas, shops, community centers	High: Where there are multiple instances of indicators likely to be used by sensitive groups (i.e. children)
		Medium: Where one indicator is present that is likely to be used by sensitive groups (i.e., children)
		Low: Indicators that are unlikely to be used by sensitive groups
Road users	Roads, junctions, road classification, baseline traffic volumes, signage.	Determined by the presence of other affected parties in this table

11.4.6 The following transport related impacts have been considered within this assessment (residential and business amenity is included within **Chapter 7: Noise and Vibration [TR030008/APP/6.2]**):

a. **Traffic and transport:** this is based upon the GEART (Ref 11-1) which sets out two rules for the assessment of traffic:

- i Rule 1 – include highway links where traffic flows will increase by more than 30% (or the number of HGVs will increase by more than 30%).

- ii Rule 2 – include any other specifically sensitive areas where traffic flows will increase by 10% or more.
- b. **Severance:** Severance occurs in a community when a major traffic artery separates people from places and other people. Severance occurs from difficulty of crossing a road or where the road itself creates a physical barrier. Severance can be caused to pedestrians or motorists. The GEART (Ref 11-1) suggest that changes in total traffic flow of 30%, 60% and 90% result in slight, moderate and substantial changes in severance respectively.
- c. **Pedestrian amenity:** Pedestrian amenity is broadly defined as the relative pleasantness of a journey and is considered to be affected by factors such as traffic flow, traffic composition, pavement width and separation between vehicles and pedestrians. The impact manifests itself in fear and intimidation, exposure to noise and vehicle emissions. The GEART (Ref 11-1) suggest that a doubling or halving of total traffic flow or the HGV composition could lead to perceptible negative or positive impacts upon pedestrian amenity.
- d. **Fear and intimidation:** The volume of traffic and its HGV composition are the factors that contribute to fear and intimidation. In the absence of thresholds set out in the GEART (Ref 11-1), this traffic and transport assessment considers that changes in total traffic flow of 30%, 60% and 90% are considered to result in slight, moderate or substantial impacts.
- e. **Highway safety:** Highway safety is assessed by the frequency and severity of injury accidents that are attended by the police and recorded in official accident statistics. Intensification of use or changes in the composition of traffic has the potential to have an impact on collision rates. The examination of recent collision statistics on routes within the study area has highlighted any hotspots that need further examination.
- f. **Hazardous loads:** These movements are assessed based on the estimated number and composition of such loads. Where the number of movements is considered to be significant, a risk analysis is required to determine the potential for an accident to happen and the likely effect of such an event.

11.4.7 **Table 11-4** sets out the criteria that have been used to assess the magnitude of traffic impacts for the impact types (a) to (f) listed above:

Table 11-4: Magnitude of Impact Criteria

Type of Impact	Magnitude of Impact			
	Very Low	Low	Medium	High
Traffic and transport	Occasional construction vehicles using roads over a short period of time.	Small number of construction vehicles using roads over a short period of time.	Moderate number of construction vehicles using roads over a protracted time period.	High number of construction vehicles using roads over a protracted period of time.

Type of Impact	Magnitude of Impact			
	Very Low	Low	Medium	High
	Less than 5% increase for more than six months; Between 6-15% increase for 3- 6 months; or Between 31-40% for less than three months.	6-15% increase for more than six months; 16-39% for 3-6 months; or More than 40% increase for less than three months.	16-39% increase for more than six months; or More than 40% increase for 3-6 months.	More than a 40% increase for more than 6 months.
Severance	Increase in total traffic 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% and 39%).	Increase in total traffic flows of 60-89% (or increase in HGV flows between 40% and 89%).	Increase in total traffic flows or HGV flows of 90% and above.
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% and 39%).	Increase in total traffic flows of 60%-89% (or increase in HGV flows between 40% and 89%).	Increase in total traffic flows or HGV flows 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.		
Hazardous loads	Risk assessed on a case-by-case basis depending on the material being transported, the number of loads and the proposed routing.			

11.4.8 The matrix in **Table 11-5** below has then been used to assess the significance of effect, based upon the magnitude of the impact taken from **Table 11-4** and the sensitivity of the receptor taken from **Table 11-3**.

Table 11-5: Significance of Effects Matrix

Magnitude of Impact	Sensitivity of receptor			
	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

11.5 Study Area

- 11.5.1 The Project is located in the vicinity of the Port of Immingham (“the Port”), which is owned and operated by ABP in an area that has substantial existing industrial presence.
- 11.5.2 The area of study is defined by roads where there may be potential for significant effects due to the additional traffic associated with the Project.
- 11.5.3 The following links have been included in the assessment; these define the traffic and transport study area (comprising the immediate network and the route to the Strategic Road Network), and were agreed by NELC through the Scoping exercise:
- a. A180 East – between east of A180/A1173 Junction
 - b. A1173 – between A1173/Kiln Lane and A1173/Kings Road
 - c. Queens Road – between A1173/Kings Road and Queens Road/Laporte Road
 - d. Kings Road – between A1173/Kings Road and Kings Road/Pelham Road
 - e. Manby Road – between A160/Manby Road and Kings Road/Pelham Road
 - f. A160 – between Manby Road/A160 and A160/A1077 roundabout
 - g. A160 – between A160/A1077 roundabout and A160/A180
 - h. A180 West – between A180/A1173 and A180/A160
 - i. Laporte Road – between Queens Road and Kiln Lane/Hobson Way roundabout
- 11.5.4 The extent of the traffic and transport study area is illustrated in **Figure 11.1 [TR030008/APP/6.3]**.

11.6 Baseline Conditions

Highway Network

- 11.6.1 The existing baseline highway network comprises an area that is largely industrial in nature, with very few residential properties other than in the north as the A1173 traverses the northern edge of Immingham. The only major residential area is the town of Immingham located to the south of the Port.
- 11.6.2 Queens Road is a single carriageway road providing a link from the Southern Port entrance towards the A1173, where it becomes Kings Road. Queens Road has a footway along the northern side and is street lit with right turn ghost islands into major side roads. Whilst the road is considered to be industrial in character, there are several dwellings and light industrial activities located along Queens Road adjacent to and opposite the northern boundary of the West Site.
- 11.6.3 Laporte Road is a single carriageway road located to the east of Queens Road, with which it forms a priority T-junction and continues south towards the Kiln Lane/Hobson Way/Laporte Road roundabout. The road has an existing 40mph limit on the approaches to both Queens Road and the Kiln Lane roundabout, with these being linked by a section of 60mph within the centre of the road link. There are no footways in place along Laporte Road.
- 11.6.4 Kings Road is a single carriageway road and connects with Queens Road to then form a three-arm roundabout junction with the A1173, where Kings Road then continues to the north to form a link into Immingham. The A1173 Manby Road then continues through the edge of Immingham to provide a link to the A160 in the north. It has street lighting and a footway heading northbound along one side of the road, and in the vicinity of the Site is considered to be industrial in character, although this does change to residential to the north as it enters Immingham.
- 11.6.5 The A1173, which is formed in part by Kings Road in the north, continues south as a single carriageway to form a three-arm roundabout with Kiln Lane before continuing south to form a grade separated junction with the A180. It is rural/industrial in nature and between Kings Road and Kiln Lane incorporates the Grimsby to Immingham Cycle Superhighway.
- 11.6.6 Approximately mid-way between the Kiln Lane roundabout and the junction with the A180 there is a roundabout on the A1173 which provides access into adjacent land, and there is a footway along the section leading to Kiln Lane, but no footway on the section leading to the A180.
- 11.6.7 Kiln Lane is a single carriageway and connects to the A1173 at a four-arm roundabout (A1173 heading both north and west). At this roundabout it also connects to several roads serving industrial estates (Stallingborough Industrial Estate and Industrial Estate South).
- 11.6.8 The A160 heads west from the A1173 and connects to the A180. Both of these links are part of the Strategic Road Network and are maintained by National Highways. The A180 heads east to Grimsby and west towards the closest motorway (M180) and provides the link from the local area to the wider highway network within the region.

11.6.9 **Figure 11.2 [TR030008/APP/6.3]** shows the local highway network in relation to the Project.

Public Transport

11.6.10 The nearest bus stops to the Site are located on Queens Road with bus stops with laybys on both sides of the road, with the westbound stop also including a shelter. These are served by service 5M providing a limited service between Immingham and Grimsby.

Cycle Networks and PRow baseline

11.6.11 Whilst there are no National Cycle Network routes within the study area that would likely be affected by traffic associated with the Project, the Grimsby to Immingham Cycle Superhighway does run along the A1173 between the Kings Road and Kiln Lane roundabouts.

11.6.12 The locations of the PRow within the vicinity of the Site are shown in **Figure 11.3 [TR030008/APP/6.3]**. Pedestrian facilities are limited on the local road network in the vicinity of the Project, with a footway along one side of Queens Road and along the northern side of the A1173 Kings Road providing a link into Immingham. Bridleway 36 commences on Laporte Road and runs north to the Humber, between proposed **Work No. 2** (jetty access road and pipe-rack) and proposed **Work No. 9** (Temporary Construction Area off Laporte Road).

Rail

11.6.13 The nearest railway stations to the Site are located at Habrough and Stallingborough which are approximately 6km west and 5km to the south respectively, with services operated by East Midlands Railway from both and TransPennine Express only from Habrough.

11.6.14 From Habrough during the week there is an hourly TransPennine Express service between Cleethorpes and Liverpool Lime Street, with East Midlands Railway operating a two-hourly service between Grimsby Town and Leicester via Lincoln and Nottingham as well as a two-hourly service between Cleethorpes and Barton-upon-Humber. On Sundays, the TransPennine Express service is two-hourly in the morning, but increases to hourly in the afternoon. During the summer months, there are three East Midlands Railway services between Nottingham and Cleethorpes and four services to Barton-upon-Humber with no services on either of these routes in the winter.

11.6.15 From Stallingborough, there is an East Midlands Railway weekday and Saturday service every two hours between Cleethorpes and Barton-upon-Humber, with a Sunday service of four trains per day in each direction during the summer months only, with no winter Sunday services at the station.

Road Safety

11.6.16 An analysis of traffic collision data within the study area, using data provided by NELC for a period of five years (2017-2022), has been undertaken, with the full set of data included within **Appendix 11.A [TR030008/APP/6.4]** and shown by location on **Figure 11.4 [TR030008/APP/6.3]**.

11.6.17 Traffic collision data by year and severity are shown in **Table 11-6**, and whilst some of the data in 2020 and 2021 may have been affected by COVID-19 restrictions, the use of data prior to 2017 in order to provide a full five-year analysis is not considered to be valid given that it would be at least six years old and may not reflect current conditions.

Table 11-6: Traffic Collision Data Analysis

Severity	Year					
	2017	2018	2019	2020	2021	2022
Slight	9	11	11	10	17	4
Serious	4	7	5	9	0	3
Fatal	0	0	0	0	0	0

11.6.18 **Table 11-6** shows that there was a total of 90 collisions between 2017 and 2022 in this area. Of these, 62 were classified as slight, 28 were serious, with no fatal accidents being identified. There has only been one collision within the vicinity of the A1173/Kings Road roundabout, and as such this is not considered to be an accident hotspot.

11.6.19 As illustrated on **Figure 11.4 [TR030008/APP/6.3]**, the majority of the accidents have occurred within the built up area of Immingham. No construction HGV traffic associated with the Project would be routed through this residential area. At the A1173/A180 junction there have been a total of four accidents (three slight and one serious) and again, whilst any incident is undesirable, this is not considered to constitute an existing road safety issue at this location.

11.6.20 Overall, it is concluded that there are no existing highway safety issues on the traffic routes which would be used by traffic associated with the Project, which would need to be addressed as part of the Project.

Existing Traffic Flows

11.6.21 Baseline 24 hour Annual Average Daily Traffic (“AADT”) two-way link flows for the study area are presented in **Table 11-7**, including the percentage of HGVs. The data has been obtained from the Transport Assessment (Ref 11-9) that supports the proposed IERRT development. It should be noted that Queens Road/Kings Road has been divided into two distinct sections based upon the location of the western and eastern construction sites due to the differing levels of construction traffic (as set out in **Section 11.7**) and the sensitivity of each section based upon the criteria outlined in **Table 11-3**.

11.6.22 The Link Sensitivity included in **Table 11-7** is based upon the criteria given in **Table 11-3**, with all links being low sensitivity except Link 4, Queens Road between Kings Road and Laporte Road, which has a medium sensitivity due the protected characteristics associated with the residential properties. The low sensitivity of Kings Road between the A1173 and Queens Road is based upon there not being any residential properties along this section.

Table 11-7: 2021 Baseline AADT Traffic Flows

Link	Link Description	Link Sensitivity	2021		
			All Vehicles	HGV	HGV %age
1	A180 East - between east of A180/A1173 Junction	Low	34,246	3,253	9%
2	A1173 - between A1173/Kiln Lane and A1173/Kings Road	Low	7,384	795	11%
3	Kings Road - between A1173 and Queens Road	Low	3,883	566	15%
4	Queens Road between Kings Road and Laporte Road	Medium	3,883	566	15%
5	Kings Road - between A1173/Kings Road and Kings Road/Pelham Road	Low	7,722	568	7%
6	Manby Road - between A160/Manby Road and Kings Road/Pelham Road	Low	7,415	1,139	15%
7	A160 - Between Manby Road/A160 and A160/A1077 roundabout	Low	10,536	5,048	48%

Link	Link Description	Link Sensitivity	2021		
			All Vehicles	HGV	HGV %age
8	A160 - between A160/A1077 Roundabout and A160/A180	Low	12,102	5,328	44%
9	A180 West - between A180/A1173 and A180/A160	Low	25,546	3,837	15%
10	Laporte Road - between Queens Road and Kiln Lane/Hobson Way Roundabout	Low	3,534	583	16%

Source: Ref 11-9

Future Baseline

- 11.6.23 Subject to consent being granted for the Project, there would be a phased approach to construction, with the construction of the terminal and the first phase of the hydrogen processing facility expected to start in early 2025 and last for between two and a half and three years.
- 11.6.24 Following completion of the first phase of the construction, a further five phases of the hydrogen production facility will be constructed incrementally to increase the processing capacity as the market for green hydrogen increases. There will therefore be six phases of development in total.
- 11.6.25 For the purposes of this chapter, a development scenario has been defined based on a six-phase construction timeline through to full completion of all phases over an indicative eleven-year period. This programme duration is likely to be a worst case in EIA terms. This is because although market demand could accelerate the programme for Phases 2-6, Phase 1 would always represent the peak of construction, irrespective of the subsequent programme for Phases 2 onwards.
- 11.6.26 The peak level of construction traffic is expected in Month 23, which based upon a start in early 2025, is expected to be in late 2026, and this year has therefore been used as the future assessment year.

11.6.27 Future year baseline traffic flows for the assessment year of 2026 for the peak of construction have been derived by applying the national standard programme Trip End Model Presentation Program (“TEMPRO”) to derive a traffic growth factor, as indicated in **Table 11-8**. This growth factor has been taken into account when comparing the baseline and future traffic scenarios.

Table 11-8: Traffic Growth Factor

Year	Growth Factor
2021 - 2026	1.0703

11.6.28 The peak of construction 2026 baseline traffic flows have been calculated and are shown in **Table 11-9**, with the TEMPRO growth factor providing an allowance for both growth in background traffic as well some additional levels of development.

Table 11-9: 2026 Baseline AADT Traffic Flows

Link	Link Description	2026		
		All Vehicles	HGV	HGV %age
1	A180 East - between east of A180/A1173 Junction	36,653	3,482	9%
2	A1173 - between A1173/Kiln Lane and A1173/Kings Road	7,903	851	11%
3	Kings Road - between A1173 and Queens Road	4,156	606	15%
4	Queens Road between Kings Road and Laporte Road	4,156	606	15%
5	Kings Road - between A1173/Kings Road and Kings Road/Pelham Road	8,265	608	7%
6	Manby Road - between A160/Manby Road and Kings Road/Pelham Road	7,936	1,219	15%
7	A160 - between Manby Road/A160 and A160/A1077 roundabout	11,277	5,403	48%
8	A160 - between A160/A1077 Roundabout and A160/A180	12,953	5,702	44%
9	A180 West - between A180/A1173 and A180/A160	27,342	4,107	15%

Link	Link Description	2026		
		All Vehicles	HGV	HGV %age
10	Laporte Road – between Queens Road and Kiln Lane/Hobson Way roundabout.	3,783	624	16%

11.7 Development Design and Impact Avoidance

Embedded Mitigation Measures

- 11.7.1 The Project has been designed, as far as possible, to avoid and minimise environmental impacts and effects through the process of design development, and by embedding mitigation measures into the design.
- 11.7.2 The construction phase has been designed to minimise waste and materials as far as possible in order to minimise the need for traffic trips to the Site. This will be achieved through the pre-fabrication of elements where practicable which will then be brought to the Site. In addition, it is expected that a high proportion of the materials and components used in the construction of the marine elements of the Project would be brought in by ship to the Port. Large pre-assembled parts of the hydrogen production facility are also likely to be brought in by ship to the Port. The adoption of these measures and assumptions within the overall approach to construction reduces the number of vehicle trips that would typically be required on the network, and accordingly this reduction has been reflected in the construction traffic flows used in the assessment.
- 11.7.3 All permanent access points to the work areas that require the creation of a junction bell-mouth will be designed based on the relevant standard, DMRB CD 123 Geometric Design of at Grade Priority and Signal-Controlled Junctions (Ref 11-6), and in consultation with the local highway authority, thereby negating any potential safety impact associated with construction activity. Illustrative designs for each access point are provided at **[TR030008/APP/4.3]** as part of the wider DCO application and demonstrate appropriate consideration of location, sight-lines and vehicle swept paths.

Standard Mitigation Measures

- 11.7.4 The main approach to mitigating potential traffic impacts would be through the use of management measures to reduce as far as possible the number of vehicle trips on the local highway network.
- 11.7.5 Prior to the start of the construction phase, the contractor will prepare a CTMP to control HGV movements, as well as a CWTP to control the trips made by the construction workers (including encouraging car sharing) and thus reduce the impact of the workforce upon the highway network. The CTMP and CWTP would be based on, and incorporate, the contents and requirements of the **OCTMP** and **OCWTP [TR030008/APP/6.7]**.

- 11.7.6 The CTMP and CWTP would set out measures and controls to limit the number of trips on the network in the peak hours, and as such would limit the traffic impact of the construction phase as far as possible. The plans would be implemented for the duration of the construction phase.
- 11.7.7 With reference to the **OCWTP [TR030008/APP/6.7]**, the contractor will implement a car sharing scheme to reduce the number of single occupancy trips, with an average of 1.5 workers per car considered to be achievable.
- 11.7.8 This is considered a realistic assumption given that the mode of arrival of construction workers can be controlled through travel planning measures and that construction workers would want to minimise their travel expenditure, particularly if having to pay for temporary accommodation. It is proposed that this level of traffic generation can be managed and maintained through the CWTP measures and the availability of onsite parking spaces.

11.8 Trip Distribution, Generation and Assignment

- 11.8.1 This section provides an overview of the trip distribution, generation and assignment associated with the construction, operation and decommissioning phases at the Site, and the potential impacts, and reflects the embedded and standard mitigation measures as set out above.

Construction

Construction Phase Traffic Generation

- 11.8.2 The trip generation flows during the construction phase set out the daily HGV numbers and daily workforce associated for each phase of Project construction. This provides for all vehicles associated with the construction of the landside aspect as well as the marine construction, including all waste removal along with the associated workforce.
- 11.8.3 The first phase of construction works (2025-2027) is predicted to generate the largest number of HGVs and daily workforce trips, and this is the phase that has been assessed as representing the reasonable worst case scenario.
- 11.8.4 The peak month during the first phase of construction works has been identified as Month 23 in late 2026. For the terrestrial construction programme, this will involve a total workforce of 919 personnel on-site, which equates to a total of 612 car movements based upon an average of 1.5 workers per car.
- 11.8.5 In addition, there are also 220 personnel associated with the marine construction works in which 20% are assumed to car share or use public transport which equates to a total of 176 personnel arriving by car each day.
- 11.8.6 The number of HGV movements associated with the terrestrial construction is estimated at 71 HGV movements per day, one-way. For the marine construction programme, the HGV numbers would be substantially lower with many materials and components arriving by sea and it is estimated to generate a total of 10 two-way HGV trips per day.

- 11.8.7 In addition, there will be a number of HGV trips associated with the waste onsite, and this is estimated to be an average of 23.4 HGV movements per day, one-way, which is comprised of the following, and to ensure a robust assessment a figure of 24 HGVs has been used in the assessments within this chapter.
- Landside construction phase 1.14 waste vehicles
 - Landside excavated material, two waste vehicles
 - Jetty construction, seven waste vehicles
 - Jetty excavated material, 0.4 waste vehicles
- 11.8.8 The other six phases of the Project construction would generate at least 50% less traffic than the peak which has been assessed in this chapter.
- 11.8.9 The predicted daily trip generation during the peak Project construction works (i.e. Month 23) is shown in **Table 11-10**.

Table 11-10: Total Daily Construction Traffic – Peak of Construction

	Type	To	From	Two-Way
Terrestrial and Jetty	HGVs (including waste)	Terrestrial 71 Waste 24 Jetty 4	Terrestrial 71 Waste 24 Jetty 4	Terrestrial 142 Waste 48 Jetty 8
	Landside Workers (assuming 919 workers with an average car occupancy of 1.5)	612	612	1,224
	Marine Workers (assuming 220 workers with an average car occupancy of 1.5)	147	147	294
All Vehicles		Workers 759 HGVs 99	Workers 759 HGVs 99	Workers 1,518 HGVs 199

- 11.8.10 **Table 11-10** shows there would be a total of 1,518 two-way worker trips and 199 HGV trips generated at the peak of construction, to and from the Site.
- 11.8.11 The above construction activity will occur across both the western and eastern sites, with the western site located adjacent to the A1173/Kings Road and the eastern site located adjacent to Queens Road/Laporte Road. Therefore, not all construction traffic will use the full length of Kings Road/Queens Road; the split is shown in **Table 11-11**, with the majority only using Kings Road in the north.

Table 11-11: Construction Site Traffic Split between the West and East Sites

Construction Site	Landside Construction Workers	Marine Construction Workers	Construction HGVs
West Site (A1173/Kings Road)	80%	-	70%
East Site (Queens Road/ Laporte Road)	20%	100%	30%

11.8.12 The above total construction HGV and construction worker flows from **Table 11-10** can then be shown by the western and eastern sites based upon the percentage splits from **Table 11-11**, as shown in **Table 11-12**.

Table 11-12: Daily Construction Traffic by Site (Two-Way)

Construction Site	Two-Way Construction Workers (assuming an average car occupancy of 1.5)	Marine Workers (assuming 20% travel by carshare or public transport)	Two-Way Construction HGVs
Western Site (A1173/Kings Road)	979		139
Eastern Site (Queens Road/ Laporte Road)	245	232	59
Total	1,224	232	199

11.8.13 Therefore, from the total of 199 HGVs two-way per day, only 59 would then travel past the residential properties on Queens Road, with the remainder travelling to and from the western site adjacent to the A1173/Kings Road.

11.8.14 It should also be noted that the marine worker traffic total is 232 and not the total of 294 as from **Table 11-11** 21% will travel from Laporte Road and 79% will travel along Kings Road/Queens Road to access other routes. Therefore only 79% (232 vehicles) will travel along Kings Road/Queens Road with 21% (62 vehicles) travelling along Laporte Road.

Construction Phase Daily Traffic Profile

11.8.15 Working hours on major construction sites tend to be long due to pressures of timescales and available light. Therefore, the arrival and departure of workers vehicles tend to be spread over the peak periods rather than all falling in the traditional network AM (08:00-09:00) and PM (17:00-18:00) peak hours. In an attempt to quantify this, previous discussions have been held with contractors where it was revealed that there is a general tendency for construction workers to travel early in order to avoid congestion and delay.

11.8.16 **Table 11-13** below sets out the percentage of daily inbound and outbound trips on an hour-by-hour basis and calculates the totals for the peak month of construction, including the marine workforce (Month 23). This profile is based on a count undertaken at the construction site entrance to Ferrybridge Multifuel 2 in 2017 and has been accepted on previous Environmental Assessments, and the daily traffic profile is set out in **Table 11-13** below.

Table 11-13: Construction Worker Traffic Daily Profile

Hour Beginning	Percentage split based upon survey and a working day between 07:00 and 19:00		Arrivals	Departures	Two Way
	Percentage of Daily inbound trips	Percentage of daily outbound trips			
0600	34%	2%	258	15	273
0700	25%	2%	190	15	205
0800	5%	2%	38	15	53
0900	4%	2%	30	15	46
1000	4%	3%	30	23	53
1100	4%	3%	30	23	53
1200	5%	4%	38	30	68
1300	4%	4%	30	30	61
1400	3%	3%	23	23	46
1500	2%	3%	15	23	38
1600	2%	5%	15	38	53
1700	3%	15%	23	114	137
1800	3%	35%	23	266	288
1900	2%	16%	15	121	137
2000	0%	1%	0	8	8
2100	0%	0%	0	0	0
Total	100%	100%	759	759	1518

- 11.8.17 Therefore during the weekday AM peak, 08:00 to 09:00 there is anticipated to be 53 worker trips and during the weekday PM peak 17:00 to 18:00 there is anticipated to be 137 worker trips on the road network.
- 11.8.18 The daily profile of HGV movement at the peak of construction, Month 23, is shown in **Table 11-14**, and is based on previous experience from construction sites and shows that the arrival and departure of HGVs from the Site is anticipated to be spread evenly over the day, and has been used previously within Environmental Assessments.

Table 11-14: HGV Traffic Daily Profile

Hour Beginning	Percentage of Daily inbound trips	Percentage of daily outbound trips	Arrivals	Departures	Two Way
600	0%	0%	0	0	0
700	9%	8%	10	8	18
800	9%	8%	9	8	17
900	9%	8%	9	8	17
1000	9%	8%	9	8	17
1100	9%	8%	9	8	17
1200	9%	8%	9	8	17
1300	9%	8%	9	8	17
1400	9%	8%	9	8	17
1500	9%	8%	9	8	17
1600	9%	8%	9	9	18
1700	9%	8%	9	9	18
1800	0%	8%	0	10	10
1900	0%	0%	0	0	0
2000	0%	0%	0	0	0
2100	0%	0%	0	0	0
	100%	100%	100	100	200

11.8.19 The above shows that during the weekday AM and PM peak periods, 08:00 to 09:00 and 17:00 to 18:00 respectively there would be a maximum of 18 HGVs on the road network, which is not considered to represent a severe impact.

Construction Phase Traffic Distribution

Worker Distribution

- 11.8.20 Construction worker trip distribution to the Project has been based on 2011 census data using WU03EW – Location of usual residence and place of work by method of travel to work Middle layer Super Output Areas (“MSOA” level) for North East Lincolnshire 001 (Ref 11-8). This is considered reasonable as it covers the residential area of Immingham, as well as the Port area where the Project would be located.
- 11.8.21 The construction workforce is anticipated to travel to the Site via the existing trunk road and local road networks via private car, with a distribution based upon Census Journey To Work data (Ref 11-8) for the local area, which gives the distribution set out in **Table 11-15**.

Table 11-15: Construction Worker Distribution

Route	Distribution
Laporte Road	21%
Manby Road	8%
Pelham Road	20%
A180 (W)	9%
A180 (E)	26%
A1173 (S)	16%
TOTAL	100%

11.8.22 This distribution pattern is then applied to the assumed worker trips as set out in **Table 11-16**.

Table 11-16: Construction Worker Traffic Distribution

Route	Landside		Marine	
	Assumed Number of Workers at the Peak Month	Assumed Number of Worker Car Trips (Based Upon an Average of 1.5 Workers per Car)	Assumed Number of Workers at the Peak Month	Assumed Number of Worker Car Trips (Based Upon an Average of 1.5 Workers per Car)
Laporte Road	193	128	31	37
Manby Road	76	51	12	14
Pelham Road	180	120	29	35
A180 (West)	87	58	13	16
A180 (East)	240	160	38	46
A1173 (South)	142	95	23	28
TOTAL	919	612	147	176

11.8.23 In order to provide further detail, the construction worker traffic flow distribution on Kings Road/Queens Road for each of the western and eastern sites is set out in **Table 11-17**, as the traffic is comprised of workers travelling to and from each site as well as those workers travelling to and from Laporte Road.

Table 11-17: Construction Worker Daily Traffic Distribution (Two-Way) Landside Only

	Western Site			Eastern Site			TOTAL
	Travelling to/from Laporte Road (21%)	Travelling to/from remainder of the network (79%)	Western site total	Travelling to/from Laporte Road (21%)	Travelling to/from remainder of the network (79%)	Eastern site total	
Link 3 - Kings Road - between A1173 and Queens Road	206	773	979		194		1,173
Link 4 - Queens Road between	205			51	194	245	450

	Western Site			Eastern Site			TOTAL
	Travelling to/from Laporte Road (21%)	Travelling to/from remainder of the network (79%)	Western site total	Travelling to/from Laporte Road (21%)	Travelling to/from remainder of the network (79%)	Eastern site total	
Kings Road and Laporte Road							

- 11.8.24 With reference to **Table 11-17** above, for the western site, the traffic flow on Link 3 Kings Road - between A1173 and Queens Road is comprised of all worker trips, regardless of their destination, whereas for Link 4 Queens Road between Kings Road and Laporte Road it only comprises of those workers traveling to and from Laporte Road.
- 11.8.25 Similarly for the eastern site, Link 3 Kings Road - between A1173 and Queens Road only comprises those workers travelling to destinations other than Laporte Road, and Link 4 Queens Road between Kings Road and Laporte Road comprises all workers, regardless of their destination, traveling to the eastern site.
- 11.8.26 As set out above in **Table 11-12**, 79% (232 vehicles daily) associated with the Marine side of the construction will travel along Link 3 Kings Road and Link 4 Queens Road as such this hasn't been included within the table above.
- 11.8.27 From the worker distribution set out in **Table 11-15** and the daily profile from **Table 11-13** the additional construction worker trips on the wider highway network during the weekday AM and PM peak periods can be set out as follows in **Table 11-18**.

Table 11-18: Construction Worker Weekday Peak Traffic

Route	Distribution	Construction weekday AM Peak worker trips	Construction weekday PM Peak worker trips
Laporte Road	21%	51	61
Manby Road	8%	19	23
Pelham Road	20%	49	58
A180 (W)	9%	22	26
A180 (E)	26%	63	75
A1173 (S)	16%	39	46
TOTAL	100%	243	288

11.8.28 The above level of additional trips associated with construction workers in the weekday AM and PM peak hours as set out in **Table 11-18** above, with a maximum flow of 75 on the A180(E) which equates to around 1.25 extra vehicles per minute, which would be within any daily variation, and would be controlled and mitigated through the CWTP.

HGV Distribution

11.8.29 In relation to HGV distribution, it is assumed that all construction vehicles would travel to and from the Site via the A1173 towards the A180 where they have been distributed based upon the existing pattern of movements. No HGVs are distributed through the residential area of Immingham to the north, in order to avoid travelling past the residential property adjacent to the A1173. The only exception to this would be Abnormal Indivisible Loads (“AIL”) to the Site from the Port, and these would be strictly controlled by both the Police and Local Authority to minimise any impact, as set out in Section 4 of the CTMP [TR030008/APP/6.7]

11.8.30 The predicted distribution of HGVs is provided in **Table 11-19**.

Table 11-19: HGV Distribution

Route	Distribution
A180 (West)	55%
A180 (East)	45%
TOTAL	100%

11.8.31 This distribution pattern is then applied to the predicted HGV numbers for the peak month (Month 23) as set out in **Table 11-20**.

Table 11-20: HGV Daily Distribution

Route	Assumed Number of HGV Trips (One-Way)
A180 (West)	55
A180 (East)	45
TOTAL	100

11.8.32 All of the above HGV trips would then travel to and from the M180 via the A1173, and the only exception to the above would be any AIL which would use the A1173 Kings Road to access the Site under controlled conditions.

Construction Phase Link Flows

11.8.33 Based on the trip distribution exercise and the proposed trip generation provided above, Table 11-21 outlines the number of trips on each of the links within the defined study area during the peak construction year (2026).

Table 11-21: Construction Trip Assignment – Peak of Project Construction

Link	Link Description	Peak Construction Traffic		
		All Vehicles	Workers	HGVs
1	A180 East - between East of A180/A1173 Junction	487	397	91
2	A1173 - between A1173/ Kiln Lane and A1173/Kings Road	975	775	200
3	Kings Road - between A1173 and Queens Road	1605	1405	200
4	Queens Road between Kings Road and Laporte Road	743	683	60
5	Kings Road - between A1173/Kings Road and Kings Road/Pelham Road	424	424	0
6	Manby Road - between A160/Manby Road and Kings Road/Pelham Road	126	126	0

Link	Link Description	Peak Construction Traffic		
		All Vehicles	Workers	HGVs
7	A160 - Between Manby Road/A160 and A160/A1077 roundabout	126	126	0
8	A160 - between A160/ A1077 roundabout and A160/A180	0	0	0
9	A180 West - between A180/A1173 and A180/A160	252	143	109
10	Laporte Road – between Queens Road and Kiln Lane/Hobson Way roundabout.	319	319	0

11.8.34 The trip assignment data set out in Table 11-21 forms the basis of the traffic and transport assessment set out within **Section 11.9**.

Operation

11.8.35 The trip generation during the operational phase is estimated to be 120 employee trip movements, with 67 working a shift pattern and 53 working a “normal” Monday to Friday. This would represent less than one additional car per minute travelling to and from the operational site in the traditional AM and PM peak hours, based upon the 53 employees working a traditional week, with all trips assumed to be new on the highway network. The shift workers would travel outside of the peak hours and therefore would not result in a severe impact on the operation of the highway network.

11.8.36 **Table 11-22** sets out the estimated total daily development traffic associated with the operational phase.

Table 11-22: Total Daily Operational Traffic

Type	To	From	Two-Way
HGVs	48	48	96
Shift Workers	67	67	134
“Normal” Monday to Friday workers	53	53	106
Total	168	168	336

11.8.37 From the above table there is only anticipated to be a total of 53 workers travelling in the peak hours, assuming a worst case that all will drive in a single occupancy vehicle, with 53 arriving in the weekday AM peak and 53 departing in the weekday PM peak.

11.8.38 From the worker distribution set out in **Table 11-15** the additional operational worker trips are set out in **Table 11-23**.

Table 11-23: Operational Worker Distribution

Route	Distribution	Operation weekday AM Peak worker trips	Operation weekday PM Peak worker trips
Laporte Road	21%	11	11
Manby Road	8%	4	4
Pelham Road	20%	11	11
A180 (W)	9%	5	5
A180 (E)	26%	14	14
A1173 (S)	16%	8	8
TOTAL	100%	5	53

11.8.39 The level of additional trips set out in **Table 11-20** is not considered to represent a severe impact upon either the local or SRN.

- 11.8.40 There would also be a total of 48 HGVs in and out during the day (96 two-way movements) associated with the operational hydrogen production facility. It is assumed that these HGV movements would be spread out during the day and on a 24-hour basis. This equates to an average of around four HGV two way per hour (two arrivals and two departures).
- 11.8.41 Based on this volume of traffic, with staff working shifts and only around four HGVs per hour, the levels are below the screening threshold of including highway links where traffic flows would increase by more than 30% for assessment outlined in the GEART (Ref 11-1). For this reason and as explained above, an operational traffic and transport assessment of the Project was scoped out.

Decommissioning

- 11.8.42 Given that both the number of traffic movements associated with this phase as well as the operation of the highway network at that time are uncertain, no further assessment of this phase has been undertaken.
- 11.8.43 This approach was agreed by the Planning Inspectorate in their response dated 10 October 2022 subject to the provision of an **Outline DEMP [TR030008/APP/6.6]** being secured through the DCO.

11.9 Assessment of Likely Impacts and Effects

- 11.9.1 With reference to **Table 11-3** above and based on the nature of the land use and the local highway network, the sensitivity of all traffic and transport links (save Link 4 Queens Road) within the study area is considered to be low. Queens Road has is considered to have a medium sensitivity due the residential dwellings which accommodate some residents with protected characteristics.

Construction

- 11.9.2 Based upon the 2026 future baseline traffic flows and the construction traffic flows provided above, **Table 11-24** provides the total percentage increase for total vehicles and HGVs on each of the links within the study area, during the peak construction year.

Table 11-24: 2026 Base + Peak of Construction Daily Two-Way Flows

Link No.	Link Description	Sensitivity	2026 Baseline Flow		Construction Traffic		Percentage Increase	
			Total Vehicles	Total HGV	Total Vehicles	Total HGV	Total Vehicles	Total HGV
1	A180 East - between East of A180/A117 3 Junction	Low	36,653	3,482	487	91	1%	3%

Immingham Green Energy Terminal
Environmental Statement Chapter 11: Traffic and Transport

Link No.	Link Description	Sensitivity	2026 Baseline Flow		Construction Traffic		Percentage Increase	
			Total Vehicles	Total HGV	Total Vehicles	Total HGV	Total Vehicles	Total HGV
2	A1173 - between A1173/Kiln Lane and A1173/Kings Road	Low	7,903	851	975	200	12%	24%
3	Kings Road - between A1173 and Queens Road	Low	4,156	606	1605	200	39%	33%
4	Queens Road between Kings Road and Laporte Road	Medium	4156	606	743	60	18%	10%
5	Kings Road - between A1173/Kings Road and Kings Road/Pelham Road	Low	8265	608	424	0	5%	0%
6	Manby Road - between A160/Manby Road and Kings Road/Pelham Road	Low	7,936	1,219	126	0	2%	0%
7	A160 - Between Manby Road/A160 and A160/A1077 roundabout	Low	11,277	5,403	126	0	1%	0%

Link No.	Link Description	Sensitivity	2026 Baseline Flow		Construction Traffic		Percentage Increase	
			Total Vehicles	Total HGV	Total Vehicles	Total HGV	Total Vehicles	Total HGV
8	A160 - between A160/A107 7 roundabout and A160/A180	Low	12,953	5,702	0	0	0%	0%
9	A180 West - between A180/A117 3 and A180/A160	Low	27,342	4,107	252	109	1%	3%
10	Laporte Road – between Queens Road and Kiln Lane/Hobs on Way roundabout	Low	3,783	624	319	0	8%	0%

11.9.3 **Table 11-24** indicates that for most of the links within the study area the impact is substantially below 30% for both the total vehicle number and total HGVs, with the increase in HGVs being below 30% on all links, except Link 3 Kings Road between the A1173 and Queens Road which has a low sensitivity and would experience an increase of 39% in all traffic and a 33% increase in HGVs.

11.9.4 Based upon the above percentage increases in traffic at the peak year of construction, 2026, **Table 11-25** provides an overview of the magnitude of impact of proposed peak construction traffic on each of the transport related impacts from **Table 11-3**, based upon the magnitude of impact criteria as set out in **Table 11-4**.

11.9.5 The effects on the local road network, based on:

- a. The sensitivity of each link (low for each, except the medium sensitivity of Link 4).
- b. The magnitudes of impact from **Table 11-21** can then be summarised as follows:

11.9.6 With reference to the GEART (Ref 11-1) and as explained above in **Section 11.4**, a two rule approach has been used to assess the extent of any traffic assessment as follows:

- a. Rule 1: include highway links where traffic flows will increase by more than 30% (or the number of HGVs will increase by more than 30%).
- b. Rule 2: include any other specific sensitive areas where traffic flows have increased by 10% or more.

11.9.7 Given that:

- a. The local highway network is deemed to have a low sensitivity (save for medium sensitivity Queens Road).
- b. The only links to experience a potential effect are along the A1173, Kings Road and Queens Road.
- c. No other road links are predicted to experience an adverse impact.

11.9.8 No further assessment is required of these links is required.

11.9.9 However, both the A1173 and Kings Road have a low sensitivity and as such the effect on both is minor, **not significant**.

11.9.10 Whilst it has a medium sensitivity, the effect on Queens Road is minor, **not significant** due to the low or very low magnitude of impact.

11.9.11 The following sections summarise the likely effects on receptors in terms of severance, pedestrian amenity, fear and intimidation and highway safety.

Severance

11.9.12 In terms of severance, the GEART (Ref 11-1) states that changes in traffic flow of 30%, 60% and 90% are registered as producing slight, moderate and substantial changes respectively (see **Section 11.4**). The magnitude of impact is therefore assumed to be very low for all receptors apart from Kings Road, Queens Road and the A1173 between Kiln Lane and Kings Road where it is assessed as being low due to the increase in HGV traffic of between 10% and 39%. Therefore, the effect for severance would be very low to low (**not significant**).

Pedestrian Amenity

11.9.13 For pedestrian amenity, the GEART (Ref 11-1) states that an indicative threshold would be where the traffic flow (or its lorry component) is halved or doubled (see **Section 11.4**). The magnitude of impact is therefore assessed to be very low for all receptors considered, and therefore the effect for pedestrian amenity would be low (**not significant**).

Fear and Intimidation

11.9.14 Fear and intimidation relate to the impact traffic may have on pedestrians with no commonly agreed threshold for estimating levels of danger or fear and intimidation (see **Section 11.4**). The numbers of pedestrians on the HGV route to the A180 along the A1173 is very low. The impact is therefore considered to be very low for all links apart from on Kings Road, Queens Road and the A1173 between Kiln Lane and Kings Road where it is considered to be low. Therefore, the effect on fear and intimidation would be very low to low (**not significant**).

Road Safety

- 11.9.15 For road safety, as there is not considered to be an existing accident issue on the local highway (see **Section 11.6**), all impacts will therefore be very low. Therefore, the effect on road safety is very low (**not significant**).

Hazardous Loads

- 11.9.16 It is envisaged that there will only be a very occasional requirement for hazardous loads, and as such, the impact is considered to be very low. Therefore, the effect on hazardous loads is very low (**not significant**).

Table 11-25: Magnitude of Impact

Link No.	Link Description	Sensitivity	Percentage Increase		Traffic and Transport	Severance	Pedestrian Amenity	Fear and Intimidation	Highway Safety
			Total Vehicles	Total HGV					
1	A180 East - between east of A180/A1173 Junction	Low	1%	3%	Very Low	Very Low	Very Low	Very Low	Very Low
2	A1173 - between A1173/Kiln Lane and A1173/Kings Road	Low	12%	24%	Medium	Low	Very Low	Low	Very Low
3	Kings Road - between A1173 and Queens Road	Low	39%	33%	Medium	Low	Very Low	Low	Very Low
4	Queens Road between Kings Road and Laporte Road	Medium	18%	10%	Low	Low	Very Low	Low	Very Low
5	Kings Road - between A1173/Kings Road and Kings Road/Pelham Road	Low	5%	0%	Very Low	Very Low	Very Low	Very Low	Very Low
6	Manby Road - between A160/Manby Road and Kings Road/Pelham Road	Low	2%	0%	Very Low	Very Low	Very Low	Very Low	Very Low
7	A160 - between Manby Road/A160 and A160/A1077 roundabout	Low	1%	0%	Very Low	Very Low	Very Low	Very Low	Very Low

Immingham Green Energy Terminal
Environmental Statement Chapter 11: Traffic and Transport

Link No.	Link Description	Sensitivity	Percentage Increase		Traffic and Transport	Severance	Pedestrian Amenity	Fear and Intimidation	Highway Safety
			Total Vehicles	Total HGV					
8	A160 - Between A160/A1077 roundabout and A160/A180	Low	0%	0%	Very Low	Very Low	Very Low	Very Low	Very Low
9	A180 West - between A180/A1173 and A180/A160	Low	1%	3%	Very Low	Very Low	Very Low	Very Low	Very Low
10	Laporte Road – between Queens Road and Kiln Lane/Hobson Way Roundabout.	Low	8%	0%	Low	Very Low	Very Low	Very Low	Very Low

11.9.17 As indicated in **Table 11-25**, the majority of the links assessed would experience a low or very low magnitude of impact for each type of impact considered. The exceptions are Link 2 (A1173 between A1173/Kiln Lane and A1173/Kings Road) and Link 3 (Kings Road - between A1173 and Queens Road), which would experience a medium impact for some of the assessment criteria.

11.9.18 Based upon the impact magnitudes defined in **Table 11-25** and the low sensitivity of the network on all links except Queens Road which has a medium sensitivity, the predicted traffic and transport-related effects during the peak construction year (2026) are summarised in **Table 11-26**.

Table 11-26: Classification of Traffic and Transport Effects (during Peak Construction year 2026)

Link No.	Link Description	Traffic and Transport	Severance	Pedestrian Amenity	Fear and Intimidation	Highway Safety
1	A180 East - between east of A180/A1173 Junction	Negligible Not significant	Negligible Not significant	Negligible Not significant	Negligible Not significant	Negligible Not significant
2	A1173 - between A1173/Kiln Lane and A1173/Kings Road	Minor Not significant	Negligible Not significant	Negligible Not significant	Negligible Not significant	Negligible Not significant
3	Kings Road - between A1173 and Queens Road	Minor Not Significant	Minor Not significant	Negligible Not significant	Minor Not significant	Negligible Not significant
4	Queens Road between Kings Road and Laporte Road	Minor Not Significant	Minor Not Significant	Minor Not Significant	Minor Not Significant	Negligible Not significant
5	Kings Road - between A1173/Kings Road and Kings Road/Pelham Road	Negligible Not significant	Negligible Not significant	Negligible Not significant	Negligible Not significant	Negligible Not significant
6	Manby Road - between A160/Manby Road and Kings	Negligible Not significant	Negligible Not significant	Negligible Not significant	Negligible Not significant	Negligible Not significant

Link No.	Link Description	Traffic and Transport	Severance	Pedestrian Amenity	Fear and Intimidation	Highway Safety
	Road/Pelham Road					
7	A160 - between Manby Road/A160 and A160/A1077 roundabout	Negligible Not significant	Negligible Not significant	Negligible Not significant	Negligible Not significant	Negligible Not significant
8	A160 - between A160/A1077 roundabout and A160/A180	Negligible Not significant	Negligible Not significant	Negligible Not significant	Negligible Not significant	Negligible Not significant
9	A180 West - between A180/A1173 and A180/A160	Negligible Not significant	Negligible Not significant	Negligible Not significant	Negligible Not significant	Negligible Not significant
10	Laporte Road – between Queens Road and Kiln Lane/Hobson Way roundabout	Negligible Not significant	Negligible Not significant	Negligible Not significant	Negligible Not significant	Negligible Not significant

11.9.19 This assessment of the traffic and transport effects for the Project has concluded that the traffic and transport effects within the defined study area would be negligible, not significant, with the exception being Link 2 (A1173 - between A1173/Kiln Lane and A1173/Kings Road), Link 3 (Kings Road, between A1173 and Queens Road) and Link 4 (Queens Road between Kings Road and Laporte Road) where the effect is minor, **not significant**.

11.9.20 However, it is anticipated that the residential use of certain properties on the west side of Queens Road would cease as residential use is not considered compatible with the operation of the hydrogen production facility on the West Site (**Work No. 7**). Discussions are ongoing with the owners and occupiers and, where it is not possible to acquire those properties through negotiation, acquisition powers for these properties are sought through the draft DCO **[TR030008/APP/2.1]**, which also includes a requirement to secure the permanent cessation of the residential use. In the event of acquisition of all relevant residential properties for the Project ahead of the construction works commencing, the minor, not significant, effect on those properties, as assessed in this chapter in respect of Link 4 (Queens Road, between Kings Road and Laporte Road) would not arise.

Operation

- 11.9.21 As set out in **Section 11.7**, the overall traffic generation during the operational phase is considered to be below the GEART threshold of a 30% increase in traffic, and therefore no assessment has been undertaken.

Decommissioning

- 11.9.22 As set out in **Section 11.7**, the assessment of the decommissioning phase was scoped out of the ES, and as such no assessment has been undertaken.

11.10 Mitigation and Enhancement Measures

- 11.10.1 Embedded and standard mitigation measures for traffic and transport have been included within **Section 11.7** through the adoption of the OCTMP and OCWTP **[TR030008/APP/6.7]** in order to control construction vehicle numbers.
- 11.10.2 Therefore, no further additional measures have been included to mitigate the reported effects.

11.11 Cumulative Effects

- 11.11.1 The assessment presented in this chapter and within **Appendix 11.B [TR030008/APP/6.4]** inherently includes an assessment of construction related traffic cumulative effects with other shortlisted developments. In summary, no significant cumulative effects are predicted. This is further described in **Chapter 25: Cumulative Effects and In-Combination Assessment [TR030008/APP/6.2]**.

11.12 Assessment of Residual Effects

- 11.12.1 Based upon the assessment as detailed in **Section 11.8**, no residual effects with regards to traffic and transport are anticipated.

11.13 Summary of Assessment

- 11.13.1 Based on the current understanding of traffic and transport associated with the Project, no significant effects are anticipated. A summary of potential traffic and transport impacts and mitigation measures is presented in **Table 11-27**. The assessment indicates that traffic and transport effects associated with the peak construction phase for the Project within the study area, taking into account the adoption of the OCTMP and OCWTP **[TR030008/APP/6.7]** measures, would be negligible or minor, and therefore not significant, on all links.

Table 11-27: Summary of Impacts, Mitigation Measures and Effects/Residual Effects during construction

Link No.	Receptor (Sensitivity)	Impact Pathway	Effect (with Embedded and Standard Mitigation)	Mitigation Measure	Effect/Residual Effect	Confidence
Construction						
1	A180 East - between east of A180/A1173 Junction (Low)	Traffic flows	Negligible	No additional mitigation	Negligible (Not significant)	Confidence level of significance prediction is high. Assessment based upon industry standard guidance and the implementation of a CTMP/CWTP to control the traffic movements during the critical; construction phase.
2	A1173 - between A1173/Kiln Lane and A1173/Kings Road (Low)	Traffic flows	Minor	No additional mitigation	Minor (Not significant)	Confidence level of significance prediction is high. Assessment based upon industry standard guidance.

Immingham Green Energy Terminal
Environmental Statement Chapter 11: Traffic and Transport

Link No.	Receptor (Sensitivity)	Impact Pathway	Effect (with Embedded and Standard Mitigation)	Mitigation Measure	Effect/Residual Effect	Confidence
3	Kings Road - between A1173 and Queens Road (Low)	Traffic flow	Minor	No additional mitigation	Minor (Not significant)	Confidence level of significance prediction is high. Assessment based upon industry standard guidance.
4	Queens Road between Kings Road and Laporte Road (Medium)	Traffic flow	Minor	No additional mitigation	Minor (Not significant)	Confidence level of significance prediction is high. Assessment based upon industry standard guidance.
5	Kings Road - between A1173/Kings Road and Kings Road/Pelham Road (Low)	Traffic flows	Negligible	No additional mitigation	Negligible (Not significant)	Confidence level of significance prediction is high. Assessment based upon industry standard guidance
6	Manby Road - between A160/Manby Road and Kings Road/Pelham Road (Low)	Traffic flows	Negligible	No additional mitigation	Negligible (Not significant)	Confidence level of significance prediction is high. Assessment based upon industry standard guidance

Link No.	Receptor (Sensitivity)	Impact Pathway	Effect (with Embedded and Standard Mitigation)	Mitigation Measure	Effect/Residual Effect	Confidence
7	A160 - Between Manby Road/A160 and A160/A1077 roundabout (Low)	Traffic flows	Negligible	No additional mitigation	Negligible (Not significant)	Confidence level of significance prediction is high. Assessment based upon industry standard guidance.
8	A160 - Between A160/A1077 roundabout and A160/A180 (Low)	Traffic flows	Negligible	No additional mitigation	Negligible (Not significant)	Confidence level of significance prediction is high. Assessment based upon industry standard guidance.
9	A180 West - between A180/A1173 and A180/A160 (Low)	Traffic flows	Negligible	No additional mitigation	Negligible (Not significant)	Confidence level of significance prediction is high. Assessment based upon industry standard guidance.
10	Laporte Road – between Queens Road and Kiln Lane/Hobson Way roundabout (Low)	Traffic flows	Negligible	CTMP/CWTP	Negligible (Not significant)	Confidence level of significance prediction is high. Assessment based upon industry standard guidance.

11.14 References

- Ref 11-1 Guidelines for the Environmental Assessment of Road Traffic. Institute of Environmental Assessment (1993).
- Ref 11-2 National Planning Policy Framework. Ministry of Housing, Communities and Local Government (2021).
- Ref 11-3 National Policy Statement for Ports. Department for Transport (2012).
- Ref 11-4 Travel Plans, Transport Assessments and Statements – Planning Practice Guidance. Department for Communities and Local Government (2014).
- Ref 11-5 Department for Transport Circular 01/2022 Strategic Road Network and the Delivery of Sustainable Development. Department for Transport (2022).
- Ref 11-6 Design Manual for Road and Bridges, CD 123 Geometric design of at-grade priority and signal-controlled junctions. National Highways (2021).
- Ref 11-7 North East Lincolnshire Local Plan 2013-2032 (adopted 2018). North East Lincolnshire Council (2018).
- Ref 11-8 NOMIS, Census to Work Data WU03EW - Location of usual residence and place of work by method of travel to work (MSOA level).
- Ref 11-9 Transport Assessment in support of the IERRT development. David Tucker Associates (2021).