Lighthouse Green Fuels Development Consent Order

Preliminary Environmental Information Report

Chapter 18: Traffic and Transport

Planning Inspectorate Reference: EN0110025

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Contents

Tables

1. Introduction

1.1 Overview

1.1.1 This Chapter reports the preliminary assessment of the likely significant effects of the Proposed Development with respect to Traffic and Transport.

1.1.2 This chapter of the Preliminary Environmental Information Report (PEIR) identifies the potential effects on Traffic and Transport (T&T) associated with the construction, operation, and decommissioning of the Proposed Development.

1.1.3 This chapter is informed and supported by the following Technical Appendices:

a. Appendix 18a: Base Traffic Survey Report;
b. Appendix 18b: Traffic Assumptions
c. Appendix 18c: Outline Construction Traffic Management Plan (CTMP);
d. Appendix 18d: Outline Construction Worker Travel Plan (CWTP);
e. Appendix 18e: Preliminary Assessment of Construction Phase Effects;
f. Appendix 18f: Preliminary Assessment of Operation Phase Effects; and
g. Appendix 18g: Traffic Tables and Supporting Data.

1.1.4 Where relevant, further assessment will be presented in the Environmental Statement (ES). This Chapter of this PEIR describes:

a. The policy, legislation and technical guidance that has informed the assessment (Section 2);
b. Assessment methodology and significance criteria comprising potential significant effects, identification of sensitive receptors, methods used for baseline data collection gathering and the methods used for assessment (Section 3);
c. Baseline conditions and future baseline (Section 4);
d. Embedded measures relevant to Traffic and Transport (Section 4.5);
e. Sensitivity of receptors (Section 5);
f. The preliminary assessment of likely Traffic and Transport impacts and effects (Section 6);
g. Residual effects (Section 9);
h. An outline of further work to be undertaken for the ES (Section 9.2); and
i. Limitations and assumptions (Section 9.3).

1.1.5 This preliminary Traffic and Transport assessment considers the likely

impacts and effects of the Proposed Development on both motorised and non-motorised users (NMU) of the highway network within the defined Study Area during construction, operation, and decommissioning.

1.1.6 For the purpose of this PEIR, decommissioning impacts are anticipated to be no worse than those during the Construction Phase following the implementation of a Decommissioning Traffic Management Plan (DTMP) for the works. The Construction Phase and Decommissioning Phase have therefore been assessed together.

2. Legislation and Planning Policy Context

2.1 Overview

2.1.1 The following section identifies the relevant legislation, planning policy, and guidance which underpin the assessment methodology for traffic and transport and have informed the preliminary assessment.

2.2 Legislation

Table 2-1 Traffic and Transport Legislation

Legislation	Relevance to assessment
Highways Act 1980 (Ref 1)	The Highways Act 1980 sets out the requirements pertaining to delivering highways infrastructure, managing existing highways and managing highway activity including off site highway works, for example, the creation of temporary site access.
Town and Country Planning Act 1990 (Ref 2)	The Town and County Planning Act 1990 provides the legal framework for the town and country planning system in England and Wales.
New Roads and Street Works Act 1991 (Ref 3)	The New Roads and Street Works Act 1991 provides a legislative framework for street works by undertakers and works for road purposes to the extent that these must be co-ordinated by street authorities.
Traffic Management Act 2004 (Ref 4)	The Traffic Management Act 2004 provides powers to tackle congestion and disruption on the road network and requires local authorities, where possible, to ensure that traffic can move quickly and freely on their roads.
Planning Act 2008 (Ref 5)	The Planning Act 2008 created a new development consent regime for major infrastructure projects in the fields of energy, transport, water, wastewater, and waste. It was intended to speed up the process for approving major new infrastructure projects.
Local Transport Act 2008 (Ref 6)	The Local Transport Act 2008 intended to address increasing road congestion and to improve the quality of local bus services and placed a requirement on authorities to prepare a Local Transport Plan.
Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (Ref 7)	The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 is UK legislation that sets out the requirements for assessing and mitigating the environmental impacts of major infrastructure projects. The regulations require developers to prepare an EIA and consult with stakeholders and the public. The aim of the regulations is to ensure that the environmental impacts of major projects are fully assessed and addressed, and that sustainable development principles are followed.

2.3 Policy

Table 2-2 Traffic and Transport Policy

Policy	Relevance to assessment
Overarching National Policy Statement for Energy (EN- 1) 2023 (Ref 8)	The Overarching National Policy Statement (NPS) for Energy (EN-1) explains the assessment principles to which the SoS will have regard in the examination of energy NSIPs (such as the Proposed Development) and explains the considerations for the assessment of traffic and movement impacts associated with the transport of materials, goods and personnel to and from a development during all project phases.
National Policy Statement for renewable energy infrastructure (EN-3) 2023 (Ref 9)	Sets out the needs case for renewable energy and secondly to establish the specific criteria by which applications for development consent for such schemes are to be assessed.
National Planning Policy Framework (NPPF) 2024 (Ref 10)	The National Planning Policy Framework (NPPF) is used to determine planning applications under the Town and Country Planning Act 1990 and has relevance in determinations of NSIPs. The document states the need for a Transport Statement (TS) or Transport Assessment (TA) to support developments likely to generate significant numbers of trips. It suggests that development should take advantage of opportunities for sustainable travel, facilitated by a Travel Plan (TP).
Department for Transport Circular 01/2022 Strategic Road network and the delivery of sustainable development (2022) (Ref 11)	Department for Transport (DfT) Circular 01/2022 explains how National Highways will engage with the planning system and fulfil its remit to be a delivery partner for sustainable economic growth whilst maintaining, managing and operating a safe and efficient Strategic Road Network (SRN).
Highways England Water Preferred Policy (2019) (Ref 12)	This policy provides guidance on when to move an Abnormal Indivisible Load (AIL) by water and when it is allowed to be moved by road.
Tees Valley Strategic Transport Plan (2020) (Ref 13)	The Tees Valley Strategic Transport Plan is a comprehensive plan outlining the long-term transportation strategies and infrastructure improvements for the Tees Valley region. It aims to improve connectivity, support economic growth, and promote sustainable travel across the area.
Stockton-on-Tees Borough Council Local Plan (2019) (Ref 14)	The Stockton-on-Tees Borough Council (SBC) Local Plan, adopted 30 January 2019, sets out a framework for the delivery of sustainable transport opportunities and associated infrastructure (Policy TI1), including the development of public transport, rail, and NMU networks. Multi-modal access to and from areas of industrial activity must also form part of the overall approach to the planning and development of the future transport networks, including the identification of preferred HGV routes to/from areas of industrial activity. This is particularly relevant to the location, construction, operation and decommissioning of the Proposed Development.

2.4 Guidance

Table 2-3 Traffic and Transport Guidance

Guidance	Relevance to assessment
Environmental Assessment of Traffic and Movement (2023) (Ref 15)	Known as 'the IEMA EATM Guidelines'. This guidance provides a basis for a comprehensive and consistent approach to the appraisal of traffic and movement impacts.
Planning Practice Guidance Travel Plans, Transport Assessments and Statements (2014) (Ref 16)	This PPG was published in March 2014. Together, PPGs and the NPPF set out what the Government expects of local authorities. The overall aim is to ensure the planning system allows land to be used for new homes and jobs, while protecting valuable natural and historic environments. The guidance includes specific details in relation to the preparation of a TA, TS and Travel Plan (TP).
LA 101 - Introduction to environmental assessment (2019) (Ref 17)	This document sets out the over-arching requirements and principles that form an introduction to the environmental assessment of motorway and all- purpose trunk roads.
LA 103 - Scoping projects for environmental assessment (2020) (Ref 18)	This document sets out the requirements for scoping motorway and all-purpose trunk road projects for environmental assessment.
LA 104 - Environmental assessment and monitoring (2020) (Ref 19)	This document sets out the requirements for environmental assessment of projects, including reporting and monitoring of significant adverse environmental effects.
LA 112 - Population and Human Health, Design Manual for Roads and Bridges (2020) (Ref 20)	This document sets out the requirements for assessing and reporting on the environmental effects on population and health from construction, operation and maintenance of highways projects.

3. Assessment Methodology and Significance Criteria

3.1 Overview

3.1.1 This section outlines the methodology for assessing the likely significant effects on traffic and transport from the construction, operation and decommissioning of the Proposed Development.

3.1.2 The assessment methodology that is used to determine the potential effects of the Proposed Development on the T&T networks within the assessment area follow the Institute of Environmental Management and Assessment (IEMA) guidelines, as set out in 'Environmental Assessment of Traffic and Movement' (EATM) (2023). This document supersedes the 'Guidelines for the Environmental Assessment of Road Traffic' (IEMA, 1993) which, until early-2023, provided the basis of the transport assessment process.

3.1.3 It is important to understand the difference between a formal TA and an EIA traffic and movement assessment. As identified with the 2023 IEMA EATM guidelines:

a. TAs report on the overall strategy for the development of sites and to maximise accessibility for non-car modes of transport, but also to assess the traffic impact of the proposals; and

b. Traffic and movements assessments for EIA present the impact of traffic and movement on people and the environment – which are initially undertaken with reference to daily traffic flows prior to assessing the highest potential impacts, or 'worst case' scenario.

3.2 Scoping

3.2.1 A scoping consultation has been undertaken with statutory consultees with responses from the consultation received from the Planning Inspectorate (PINS) on 11 November 2025, and late responses from National Highways and Stockon-on-Tees Borough Council (STBC) on 20th November 2025 and 21st November 2025 respectively. The responses and how they are addressed in this chapter will be addressed in the final ES are outlined in Table 3-1.

Table 3-1 Consultation Responses and Comments

Consultee or organisation approached	Date and nature of consultation	Summary of responses	How comments have been addressed in this chapter
PINS	Scoping Opinion - 11th November 2025	It is unclear what mechanism will be in place to ensure that ship/rail are utilised over road movements for the operational movement of feedstock. Therefore, the Inspectorate does not agree to scope this matter out at this stage. Accordingly, the ES should include an assessment of these matters, or the information referred to demonstrating agreement with the relevant consultation bodies and the absence of a likely significant effect.	Operational effects have been scoped in for the assessment and are provided in Section 6.3 in this PEIR chapter.
		The Scoping Opinion proposes to scope out decommissioning phase effects on the basis that these would be similar to or less than the construction phase. As noted in paragraph 18.7.9 decommissioning works are uncertain at this stage. Furthermore, since the construction phase is scoped in on the basis that significant effects could occur, there is potential for significant effects to occur within the decommissioning phase.	TA will include consideration of decommissioning phase impacts.
		The Scoping Report provides limited justification for scoping operational and decommissioning traffic out and then acknowledges that this approach has not been agreed with consultees (paragraph 18.11.1). As such, the Inspectorate is not in a position to scope these matters out at this stage. The ES should refer to the Traffic Assessment.	TA will include consideration of decommissioning phase impacts.
		The study areas should include the affected road network where there is the potential for significant effects for all phases of the proposed development. The ES should include a figure showing the study area for the assessment. This should be justified and explained in the ES and agreed with relevant consultees	This is provided in Section 4.2 of this PEIR chapter.
		It is stated that the applicant intends for the feedstock to be delivered by rail. The ES should provide numbers of rail movements associated with the operational of the proposed development and demonstrate that there is capacity on the rail network to accommodate the additional flows. Agreements and consents/easements may be required.	This will be clarified as part of the ES.

Consultee or organisation approached	Date and nature of consultation	Summary of responses	How comments have been addressed in this chapter
		The ES should differentiate between incoming trips generated for feedstock and outgoing trips generated for waste streams and this should consistently be reported throughout the description of the proposed development and aspect assessments.	This will be clarified as part of the ES.
		The Scoping Report provides a list of four speculative mitigation measures. The ES should specify whether mitigation measures are embedded or 'additional'/'secondary' and these should be secured in the DCO where relevant. Effort should be made to agree any mitigation measures with relevant consultation bodies.	These are embedded mitigation as identified in Section 4.5 of this PEIR chapter.
		The Scoping Report estimates that 2000 construction staff will be required during the peak of construction phase. The ES should ensure that this is factored into the construction traffic assessment.	This has been addressed throughout this PEIR chapter and accompanying appendices.
		The Scoping Report indicates that no surveys have been undertaken to date to inform the baseline use of the PRoW and cycle network that are adjacent to the proposed development. The ES should appropriately characterise the baseline use of the affected PRoW and cycle networks and identify any diversions and/or closures to these networks during construction/decommissioning. The locations diversions or closures should also be illustrated on suitable figures in the ES. The applicant should consider the potential for the proposed development to enhance the quality of the PRoW and cycle network, with particular reference to promoted routes.	This will be clarified as part of the ES.
		The assessment proposes to use the Trip End Model Program (TEMPro) to predict the level of background traffic growth at the peak year of construction. The ES should also assess the operational traffic against background traffic flows for the peak year of operation of the proposed development.	This has been addressed in Section 3.9 of this PEIR chapter.
		The Scoping Report identifies the use of Strava 'heat maps' to inform accident data. The ES should justify why the use of such maps is a robust data source for establishing accident data baseline conditions, particularly considering there is potential for routes to be used by non-motorised users who may not use the Strava application. Therefore, these maps are unlikely to represent a	Strava has not been used to inform the information presented in this PEIR chapter. Instead, CrashMaps and the DfT MAVRIC

Consultee or organisation approached	Date and nature of consultation	Summary of responses	How comments have been addressed in this chapter
		worst-case scenario. Furthermore, these maps do not provide quantitative data of route usage.	Tool have been used as sources to inform accident data.
National Highways	Scoping Response – 20th November 2025	Position is to withhold comment on the study area until the traffic flow diagrams have been shared with National Highways. We would, however, note that A19(T)/A689 Interchange is subject to a significant cumulative impact from committed development in Hartlepool's and Stockton's authorities.	Traffic flow diagrams will be shared with NH through the TA process as part of the ES.
		National Highways would direct the Applicant to the Department for Transport [DfT] Mapping Application for Visualising Road Injury Casualties [MAVRIC] tool. Subject to study area including the SRN, National Highways would state that there may be a need for a baseline assessment of the relevant SRN sections.	Junctions within the SRN have been included in the study area and will be assessed as part of the ES.
		Prior to any abnormal loads being delivered to the site via the SRN, the Applicant should contact the National Highways Abnormal Loads Team in advance to discuss the details of any abnormal load(s). Swept path analyses must also be provided for any AIL movements via the SRN.	Swept path analyses for any AIL movements using the SRN will be shared with NH through the TA process as part of the ES.

3.4 Potential Significant Effects

3.4.1 As identified in the EIA Scoping Report, the following environmental effects are susceptible to change and are considered to be potentially significant and have been considered further in this Chapter:

a. Severance: severance is the perceived division that can occur within a community when it becomes separated by major transport infrastructure. The term is used to describe a complex series of factors that separate people from places and other people;

b. Pedestrian Delay (incorporating delay to all NMUs): the ability of people to cross a road as a result of changes in traffic volume, composition and speed, the level of pedestrian activity, visibility and general physical conditions. Pedestrian delay and severance are closely related effects and should be grouped together;

c. NMU Amenity: NMU amenity is broadly defined as the relative pleasantness of a journey and is considered to be affected by changes in traffic flow, traffic composition and pavement width/separation from traffic;

d. Fear and Intimidation: a further environmental impact that affects people is the fear and intimidation created by all moving objects. The extent of fear and intimidation is dependent on the total volume of traffic, the heavy vehicle composition, the speed these vehicles are passing, and the proximity of traffic to people;

e. Road Safety: the risk of accidents occurring where the Proposed Development is expected to produce a change in the character of traffic; and

f. Hazardous loads.

3.4.2 The following environmental effects will be considered as part of the preparation of the ES at the next stage:

a. Driver Delay: traffic delays to non-development traffic; and

b. Road Safety Audits: The standard and prescribed Road Safety Audits (GG119 – Road Safety Audit DMRB) will be used to review the road safety attributes of any proposed engineering changes in the adopted highway prior to submission of the ES, if considered appropriate. At this stage, it is unclear if any highway accesses will be required to be upgraded.

3.5 Sensitive Receptors

3.5.1 In the context of this PEIR, sensitive receptors are considered to be users

of the local highway network to whom the transport impacts of the Proposed Development from its construction, operation, and decommissioning may be perceptible.

3.5.2 The following sensitive receptors have been identified and will be considered in this Chapter:

a. Motorised Users – Motorised users of the surrounding highway network, including motorists and freight vehicles;
b. Non-Motorised Users (NMU), such as pedestrians and cyclists, of the surrounding highway network;
c. Public Rights of Way (PRoW) and non-designated public routes users - pedestrians, cyclists, equestrians (and vulnerable groups);
d. Public Transport Users; and
e. Emergency Services.

3.5.3 In addition, the EATM identifies special interests that should be considered when defining sensitive receptor geographic locations. The sensitive locations inform the assessment of effect significance when development traffic is assigned to the network and includes:

a. People at home;
b. People at work;
c. Sensitive and/or vulnerable groups (including young age, older age income; health status; social disadvantage; and access and geographic factors);
d. Locations with concentrations of vulnerable users (e.g. hospitals, places of worship, schools);
e. Retail areas;
f. Recreational areas;
g. Tourist attractions;
h. Collision clusters and routes with road safety concerns; and
i. Junctions and highway links at (or over) capacity.

3.5.4 The EATM guidance indicates that sensitive receptors within the agreed Study Area should be assigned to the nearest highway link, and the relationship with the highway environment examined to understand the sensitivity of those receptors to change. Section 3.10 classifies the sensitivity of the links within the Study Area with regards to the above considerations and this sensitivity to change is used in the assessment of significance.

3.6 Baseline Data Collection

3.6.1 A desk study has been undertaken which has included a review of the strategic and local road network, public transport networks, PRoW network, and accident data within the Study Area for the Proposed Development.

3.6.2 A summary of the organisations that have supplied data, together with the nature of that data is outlined in Table 3-2.

Table 3-2 Baseline Data Collection

Data Type	Data Source	Data Provided
Census*	Census 2011	'Location of usual residence and place of work by method of travel to work' for the category 'Driving Car or Van'. The Middle Layer Super Output Area (MSOA) 'Stockton-on-Tees 003'.
Ordnance Survey Mapping	Bing maps allows access to Ordnance Survey Mapping	1:50,000 and 1:25,000 Ordnance Survey Mapping of the Study Area.
Google Traffic	Google Maps website	Data on congestion on local roads and junctions within the Study Area.
Google Street View	Google Maps website	Street view imagery.
Personal Injury Collision Data	CrashMap website	Personal Injury Collision (PIC) data within the Study Area for 2015-2023.
PRoW Information	Stockton-on-Tees Borough Council (STBC) website Redcar and Cleveland Borough Council (RCBC) website	PRoW information from the respective online Definitive maps.
Traffic Data	Department for Transport (DfT) website supplemented with privately commissioned junction turning counts	Historic data from the DfT permanent count locations at identified Highways Links.
Bus Service Information	Stagecoach website	Bus Service information for the local area.
National Cycle Network (NCN) Map	Sustrans website	Overview of the NCN within the Study Area.
Local Cycle Maps	Tees Valley Cycle Map	Overview of the local cycle network within the Study Area.

Data Type	Data Source	Data Provided
DfT Trip End Model Presentation Programme (TEMPro) Data	The National Trip End Model (NTEM) forecasts the growth in trip origin-destinations (or productions-attractions) up to 2051 for use in transport modelling. The NTEM includes planning data to allow for traffic growth as a result of new development. The TEMPro software allows users to view the NTEM dataset and has been used to derive traffic growth factors between years, e.g. from baseline year to forecast year.	Traffic growth rates for the Study Area.
Network Rail Map	Network Rail website	Details of active rail lines in the Study Area.

*Census 2011 data has been used in place of 2021 data due to altered commuting patterns experienced as part of the Covid-19 pandemic.

3.7 Data Limitations

3.7.1 The preparation of the ES Chapter will likely be supplemented by the following data sources:

a. Traffic Counts:

i. Junction Turning Counts (JTCs) including queue length surveys at junctions within the Study Area (Inset 4-1) during 2024 during a neutral month for a 24-hour period on a weekday;

ii. Automatic Traffic Counts (ATCs) on selected connecting highway links during 2024 during a neutral month for one week; and

iii. NMU Surveys for selected routes during a neutral month.

3.7.2 This data will also inform updated assessments for Air Quality and Noise and Vibration. See Chapter 8: Air Quality (PEIR Volume 1) and Chapter 9: Noise and Vibration (PEIR Volume 1) for further details.

3.8 Assessment Methodology

3.8.1 The environmental effects of traffic generated by the Proposed Development have been preliminarily assessed with reference to the Design Manual for Roads and Bridges (DMRB), EATM, and other guidance as detailed in Section 2 of this Chapter. In accordance with this guidance, environmental effects of Traffic and Transport including severance, pedestrian delay (incorporating delay to all NMU), NMU amenity, fear and intimidation, road safety and driver delay associated with the Proposed Development are required to be assessed.

3.8.2 Preliminary assessments for severance and pedestrian delay (incorporating delay to all NMU), NMU amenity, fear and intimidation and a high-level assessment of road safety associated with the Proposed Development are presented within this Chapter. The effects of driver delay will be assessed in the Transport Assessment (TA) that will accompany the ES.

3.8.3 The preliminary assessments for severance and pedestrian delay (incorporating delay to all NMU), NMU amenity, and fear and intimidation will also be updated and included in the ES. A detailed assessment of road safety will be undertaken as part of the accompanying TA. The updates to these assessments will be informed by additional baseline traffic data and informed by consultation with the relevant consultation bodies.

3.8.4 For the purposes of this Chapter, it is assumed that construction materials will be delivered by road (smaller equipment and materials) and by water (larger modules and equipment), as set out in further detail in Chapter 5: Construction Programme and Management (PEIR Volume 1).

3.8.5 In relation to road, it is assumed that that up to 180 HGVs (180 in/180 out) will be required daily during the peak of the Construction Phase. In addition, it is anticipated up to 2,000 construction workers will be required to support the construction of the Proposed Development.

3.8.6 Transport movements by water are considered in Chapter 20: Marine Navigation (PEIR Volume 1).

3.8.7 During the Construction Phase it is anticipated that there will be a requirement for the transportation of Abnormal Indivisible Loads (AIL). Abnormal loads may be delivered to the Main Site via the highway network. However, the primary route for AIL and module delivery will be by ship using the newly constructed quay. The ES will confirm the maximum number of AIL required and the types of vehicles required. Any mitigation measures required to facilitate the delivery of AIL will be detailed in the ES and the likely significant effects assessed.

3.8.8 The preliminary assessment set out in this Chapter has considered the existing Traffic and Transport conditions around the Proposed Development and has assessed the network and corridor performance in relation to a number of receptors. This is based on existing data from a range of sources detailed later in this section of the report.

3.8.9 The preliminary assessment also sets out the findings of trip estimates from the Proposed Development, the mode split of all road vehicle trips, and the likely distribution across the transport network.

3.8.10 Any likely significant environmental effects relating to noise and vibration and air pollution, generated by traffic from the Proposed Development, are

considered in Chapter 8: Air Quality (PEIR Volume 1) and Chapter 9: Noise and Vibration (PEIR Volume 1).

3.8.11 The traffic impacts of decommissioning works are uncertain at this stage. However, it is anticipated that they would be similar to or less than the Construction Phase. Further details will be provided in the ES as more information on the Proposed Development becomes available. A DTMP would be prepared at the time of decommissioning.

3.9 Assessment Scenarios

3.9.1 The following assessment scenarios for the Construction Phase and Operation Phase have been considered for this PEIR to establish the preliminary effects:

a. Construction Phase:
   i. 2025 Baseline – these are the DfT Traffic Flows for the locations shown in Appendix 18a: Base Traffic Survey Report (PEIR Volume 2) with traffic growth applied using TEMPro;
   ii. 2025 Baseline – these are the DfT Traffic Flows for the locations shown in Appendix 18a: Base Traffic Survey Report (PEIR Volume 2 with traffic growth applied using TEMPro;
   iii. 2030 Do Minimum – this is the 2030 Baseline scenario plus committed development; and
   iv. 2030 Do Something – this is the 2030 Do Minimum scenario plus the peak of construction traffic associated with the Proposed Development.

b. Operation Phase:
   i. 2032 Baseline – these are the DfT Traffic Flows for the locations shown in Appendix 18a: Base Traffic Survey Report (PEIR Volume 2) with traffic growth applied using TEMPro;
   ii. 2032 Do Minimum – this is the 2032 Baseline scenario plus committed development; and
   iii. 2032 Do Something – this is the 2032 Do Minimum scenario plus operation traffic associated with the Proposed Development.

3.9.2 The years for each of the assessment scenarios identified above have been based on the latest version of the Programme Schedule available at the time of preparing this Chapter. The indicative construction schedule is described in Chapter 5: Construction Programme and Management (PEIR Volume 1) which identifies that the Construction Phase will be between 2028 and 2031 (current estimate), with the highest intensity elements of the work focused in 2030 and identifies that the Commissioning/Operating

Phase opening year is anticipated to be 2031. This will be confirmed as part of the ES and TA.

3.9.3 It is anticipated that the '2032 Do Something scenario' will assume that the Proposed Development will not be connected to the NEP CO_2 Gathering Network pipeline from the beginning of the Operation Phase as it is not yet certain that NZT will be available to the Proposed Development once operational. Additional alternative sensitivity scenarios may also need to be included as part of the ES to test a range of scenarios.

3.10 Sensitivity of Receptor

Non-Motorised Users

3.10.2 A desktop exercise has been undertaken to classify the sensitivity of the routes within the Study Area based on the guidance contained in DMRB LA104 and EATM. For example, if the route passes a school, care home or similar it would have a higher sensitivity due to the presence of vulnerable users. Similarly, if the route runs through the middle of a town or village, it will have a higher sensitivity than if there was limited direct access to frontage development.

3.10.3 In accordance with Table 3.2N in DMRB 'LA 104 - Environmental assessment and monitoring', the sensitivity of the affected receptors will be assessed on a scale of high, medium, low and negligible in the context of the sensitivity of the road links within the Study Area.

3.10.4 The means by which the sensitivity of receptors (such as NMUs) for transport effects is defined depends upon the element that is being assessed (i.e. severance, delay, amenity, intimidation, etc). Some of these seven elements have their own method to determine sensitivity levels, while others use a qualitative-based approach, applied in accordance with the following descriptions:

a. Negligible: receptors which are very lightly used (by all users or particularly by vulnerable road users) relative to other receptors within the assessment area or those which have a very high capacity to accommodate change without significant effects arising;

b. Low: receptors which are lightly used (by all users or particularly by vulnerable road users) relative to other receptors within the assessment area or those which have a high capacity to accommodate change without significant effects arising;

c. Medium: receptors which are used (by all users or particularly by vulnerable road users) to an average level relative to other receptors within the assessment area or those which have a moderate capacity to

accommodate change without significant effects arising; and

d. High: receptors which are heavily used (by all users or particularly by vulnerable road users) relative to other receptors within the assessment area or those which have a low capacity to accommodate change without significant effects arising. All accidents are considered to fall within this category.

3.10.5 The sensitivity of a road link, or the immediate area through which it passes, including PRoW, is defined by the type of user groups who may use it. Vulnerable users include elderly residents and children. It is also necessary to consider footpath and cycle route networks that cross the roads within the Study Area. The sensitivity has been informed from a desktop study, in addition to local knowledge and a site visit. A review of the sensitivity will be undertaken at the ES Stage which will be informed by results of any further NMU surveys.

Motorised Users

3.10.6 The sensitivity of a junction will be classified in relation to the baseline operation performance of the junction. The level of traffic a junction can theoretically accommodate without incurring significant delays and/or congestion, the 'capacity', is compared to the level of traffic which is typically travelling through that junction. This relationship between capacity and traffic flow is assessed by the metric of 'Ratio of Flow to Capacity' (RFC). It is typically recognised that a maximum RFC value of 0.85 is desirable. If the RFC is greater than this, but below 1.00, this suggests that the traffic flow is approaching capacity and at risk of queues building. Where an RFC exceeds 1.00, the junction is exceeding theoretical capacity.

3.10.7 The sensitivity of a junction will be assigned according to the rationale in Table 3-3.

Table 3-3 Junction Sensitivity

	RFC Value				
	> 0.50	0.50 – 0.70	0.70 – 0.85	0.85 – 1.00	> 1.00
Sensitivity	Negligible	Low	Medium	High	Very High

3.10.8 Prior to the preparation of the ES, the sensitivity of the receptors will be agreed with the LHA and National Highways, taking into account locally specific issues.

3.11 Magnitude of Impact

3.11.1 The traffic generated by the Proposed Development will be used to assess the impacts on the key links and junctions on the surrounding network. The likely effects of the Proposed Development will be evaluated in accordance with the IEMA EATM Guidelines.

3.11.2 The guidelines acknowledge that for many effects, there are no simple rules or formulae which define appropriate thresholds and therefore there is a need for interpretation and the application of professional judgement on the part of the assessor, backed up by data or quantified information wherever possible.

Severance and Pedestrian Delay (incorporating delay to all non-motorised users)

3.11.3 Severance occurs in a community when a major 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 IEMA EATM guidelines states that historical guidance published by the DfT suggested changes in total traffic flow of 30%, 60% and 90% result in slight, moderate, and substantial changes in severance respectively. The IEMA EATM guidelines notes that this guidance no longer appears in DfT guidance but has not been superseded by subsequent changes and is established through planning case law. On this basis, it is considered appropriate to continue using these indicators to assess severance. Table 3-4 contains how the magnitude of impacts on receptors shall be reported within this preliminary assessment with respect to severance.

Table 3-4 Magnitude of Impact (Severance)

	Magnitude of Impact (degree of change)				
	No Change	Negligible	Minor	Moderate	Major
Severance Pedestrian Delay	No change in traffic flow	Change in total traffic flow of <30%	Change in total traffic flow of 30% to 60%	Change in total traffic flow of 61% to 90%	Change in total traffic flow of >90%

Non-motorised User Amenity

3.11.4 NMU amenity is broadly defined as the relative pleasantness of a journey, and is considered to be affected by 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 IEMA EATM Guidelines state that historical

guidance published by the DfT suggested that a doubling or halving of total traffic flow or the HGV composition could lead to perceptible adverse or beneficial impacts upon NMU amenity. The IEMA EATM Guidelines note that this guidance no longer appears in DfT guidance but has not been superseded by subsequent changes and is established through planning case law. On this basis, it is considered appropriate to continue using these indicators to assess NMU amenity. Table 3-5 contains how the magnitude of impacts on receptors shall be reported within this preliminary assessment with respect to NMU amenity.

Table 3-5 Magnitude of Impact (NMU Amenity)

	Magnitude of Impact (degree of change)				
	No Change	Negligible	Minor	Moderate	Major
NMU Amenity	No change in traffic flow	Changes in traffic flow (or HGV component) <30%	Changes in traffic flow (or HGV component) >30 and <50%	Changes in traffic flow (or HGV component) of 50% to 100%	Changes in traffic flow (or HGV component) of >100%

Fear and Intimidation

3.11.5 The IEMA EATM guidelines state that the extent of fear and intimidation is dependent on the total volume of traffic, the heavy vehicle composition, the speed that these vehicles are passing and the proximity of traffic to people. The IEMA EATM Guidelines provide a weighted system to provide an approximation of the likelihood of pedestrian fear and intimidation. The degree of hazard is assessed with reference to the established thresholds (a, b and c) (see Table 3-6) and a score is provided for each combination on a highway link under consideration (see Table 3-7). The magnitude of impact is approximated with reference to changes in the level of fear and intimidation from baseline conditions (see Table 3-8).

Table 3-6 Fear and Intimidation Degree of Hazard

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

Table 3-7 Level of Fear and Intimidation

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

Table 3-8 Magnitude of Impact (Fear and Intimidation)

Magnitude of Impact	Change in step/traffic flows (AADT) from baseline conditions
High	Two step changes in level
Medium	One step change in level, but with: >400 vehicle increase in average 18hr All Vehicle (AV) two-way vehicle flow; and/or >500 Heavy Vehicle (HV) increase in total 18-hour HV flow
Low	One step change in level with: <400 vehicle increase in average 18-hour AV two-way vehicle flow; and/or <500 HV increase in total 18-hour HV flow
Negligible	No change in step changes
No Change	No observable impact

Public Transport

3.11.6 There is no formal or published guidance for the assessment of effects on the public transport network. Accordingly, professional judgement will be applied to determine the sensitivity of the receptor and the magnitude of impact on the public transport network. For the purpose of this assessment, the following factors will be taken into consideration:

a. changes in bus and rail capacity;

b. enhancements to existing routes/services;

c. new routes/services; and

d. changes to the connectivity/waiting facilities of public transport interchanges.

3.11.7 Together the sensitivity of the receptor and magnitude of the impact will be used to determine the significance of effect. The impact of the Proposed Development on the public transport network and effect to public transport users will be grouped with driver delay and considered together.

Driver Delay

3.11.8 The use of industry standard junction capacity modelling programmes (Junctions 10 and LINSIG) provides a methodology to quantify junction delay. Driver delay is only likely to be significant where the existing Study Area highway network is at or close to capacity. In accordance with The IEMA EATM Guidelines (2023), this approach is considered to be appropriate to assess driver delay.

3.11.9 Magnitude of impact derived using professional judgment informed by the increase in vehicle delay and whether a junction is at, or close to capacity. At this stage, the impact on driver delay has not been assessed. Impacts to local network performance will be assessed in the TA and impacts to driver delay presented in the ES.

Road Safety

3.11.10 Road 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 effect on collision rates. The examination of recent collision statistics on routes within the Study Area will highlight any hotspots that need further examination.

3.11.11 The PIC records for the local highway network will be examined for the five-year period prior to the onset of the Covid-19 pandemic to allow for a full road safety analysis to be undertaken which is unaffected by the Covid-19 pandemic, along with obtaining all PIC records since then to ensure a comprehensive analysis has been undertaken. In accordance with The IEMA EATM Guidelines, this approach is considered to be appropriate to assess road safety.

3.11.12 Magnitude of impact derived using professional judgment informed by the frequency and severity of recorded collisions within the Study Area and the forecast increase in traffic.

Road Safety Audits

3.11.13 The IEMA EATM Guidelines state that the standard and prescribed Road Safety Audits (GG 119 – Road Safety Audit DMRB) should be used to review the road safety attributes of any proposed engineering changes in the adopted highway prior to submission. No engineering changes in the adopted highway are proposed at this stage.

Hazardous Loads

3.11.14 The assessment of hazardous loads has been based upon the nature of

hazardous loads being transported and the number of movements anticipated to illustrate the potential and likely effect of a catastrophic event.

3.11.15 Hazardous loads are assessed on the basis set out within the IEMA EATM Guidelines Major Accidents and Disasters Guidance (2020), when it is determined to be a low-likelihood/high-consequence event. Events assessed to be low consequence (i.e., leaks and spills at construction sites) are not in the scope of major accidents and/or disaster assessments as they do not meet the definition and hence will be assessed under other criteria. Chapter 19: Major Accidents and Disasters (PEIR Volume 1).

3.12 Evaluation of Significance

3.12.1 The traffic generated by the Proposed Development has been used to assess the preliminary impacts on the key links and junctions on the surrounding network. The significance of the Traffic and Transport related environmental effects is a function of the magnitude of change associated with the Proposed Development and the sensitivity of the affected receptor. The significance of effect will be reported using the classifications and matrix for significance basis set out in Table 3-9.

3.12.2 Table 3-9 and Table 3-10 combines sensitivity with the magnitude of impact (degree of change), classifying the effects as negligible, minor, moderate or major (adverse or beneficial). The significance matrices are based on Table 3.8.1 from LA104 (Highways England, 2020b) and adjusted where required.

Table 3-9 Significance Matrix (Severance, Pedestrian Delay, NMU Amenity, Driver Delay)

Significance of effect		Magnitude of Impact (degree of change)				
		No Change	Negligible	Minor	Moderate	Major
Environmental Value (Sensitivity)	Very High	Neutral	Slight	Moderate	Large	Very Large
	High	Neutral	Slight	Moderate	Moderate	Large
	Medium	Neutral	Neutral	Slight	Moderate	Moderate
	Low	Neutral	Neutral	Slight	Slight	Moderate
	Negligible	Neutral	Neutral	Neutral	Neutral	Slight

Table 3-10 Significance Matrix (Fear and Intimidation)

Significance of effect		Magnitude of Impact (degree of change)				
		No Change	Negligible	Minor	Moderate	Major
Environmental Value (Sensitivity)	Very High	Neutral	Slight	Moderate	Large	Very Large
	High	Neutral	Slight	Moderate	Moderate	Large
	Medium	Neutral	Neutral	Slight	Moderate	Moderate
	Low	Neutral	Neutral	Slight	Slight	Moderate
	Negligible	Neutral	Neutral	Neutral	Neutral	Slight

3.12.3 The assessment of the significance of environmental effects shall also cover the following factors:

a. The receptors/resources (natural and human) which would be affected and the pathways for such effects;

b. The geographic importance, sensitivity or value of receptors/resources;

c. The duration (long or short-term); permanence (permanent or temporary) and changes in significance (increase or decrease);

d. Reversibility e.g. is the change reversible or irreversible, permanent or temporary;

e. Environmental and health standards (e.g. local air quality standards) being threatened; and

f. Feasibility and mechanisms for delivering mitigating measures, e.g. Is there evidence of the ability to legally deliver the environmental assumptions which are the basis for the assessment?

3.12.4 'Significant effects' comprise residual effects that are within the moderate, large or very large categories for the purposes of this EIA; neutral or slight effects are 'not significant'.

4. Baseline Conditions

4.1 Overview

4.1.1 This section outlines the current baseline data and information for the access, traffic, and transport components that are present throughout the areas covered by the T&T receptor points and traffic survey sites.

4.1.2 Baseline characterisation has been established through a combination of desk-top studies to identify existing transport networks in the vicinity of the Proposed Development and a series of traffic surveys to assess the current operation of the local road network.

4.2 Study Area

4.2.1 The spatial scope of assessment for the Proposed Development has taken into account key roads that would be affected by predicted traffic generation associated with the Construction, Operation, and Decommissioning Phases.

4.2.2 The extent of the Study Area has primarily been defined by the distribution and assignment of traffic associated with the Construction Phase of the Proposed Development, given that Traffic and Transport impacts are predicted to be greatest during the Construction Phase. The initial traffic generation estimates for the Construction Phase and Operational Phase are outlined in Section 6 of this technical Chapter and further details are included in Appendix 18b: Traffic Assumptions (PEIR Volume 3).

4.2.3 The Study Area will be reviewed and amended, if required, as further information is made available and the Proposed Development's Traffic and Transport characteristics are fully developed (including cumulative impacts and AILs) and in response to feedback from consultation.

4.2.4 Any amendments to the Study Area will primarily be based upon 'Rule 1' and 'Rule 2' of the IEMA EATM Guidelines which can be used to determine the effect of increased traffic volumes on links within the Study Area, as described below:

a. Rule 1 - Include highway links where traffic flows (or HGV flows) are predicted to increase by more than 30%; and

b. Rule 2 - Include any other specifically sensitive areas where traffic flows (or HGV flows) are predicted to increase by 10% or more.

4.2.5 Any changes to the Study Area will be agreed with the relevant highway authority as part of the technical engagement at the next stage.

4.2.6 The proposed Traffic and Transport Study Area is set out in Figure 18.1

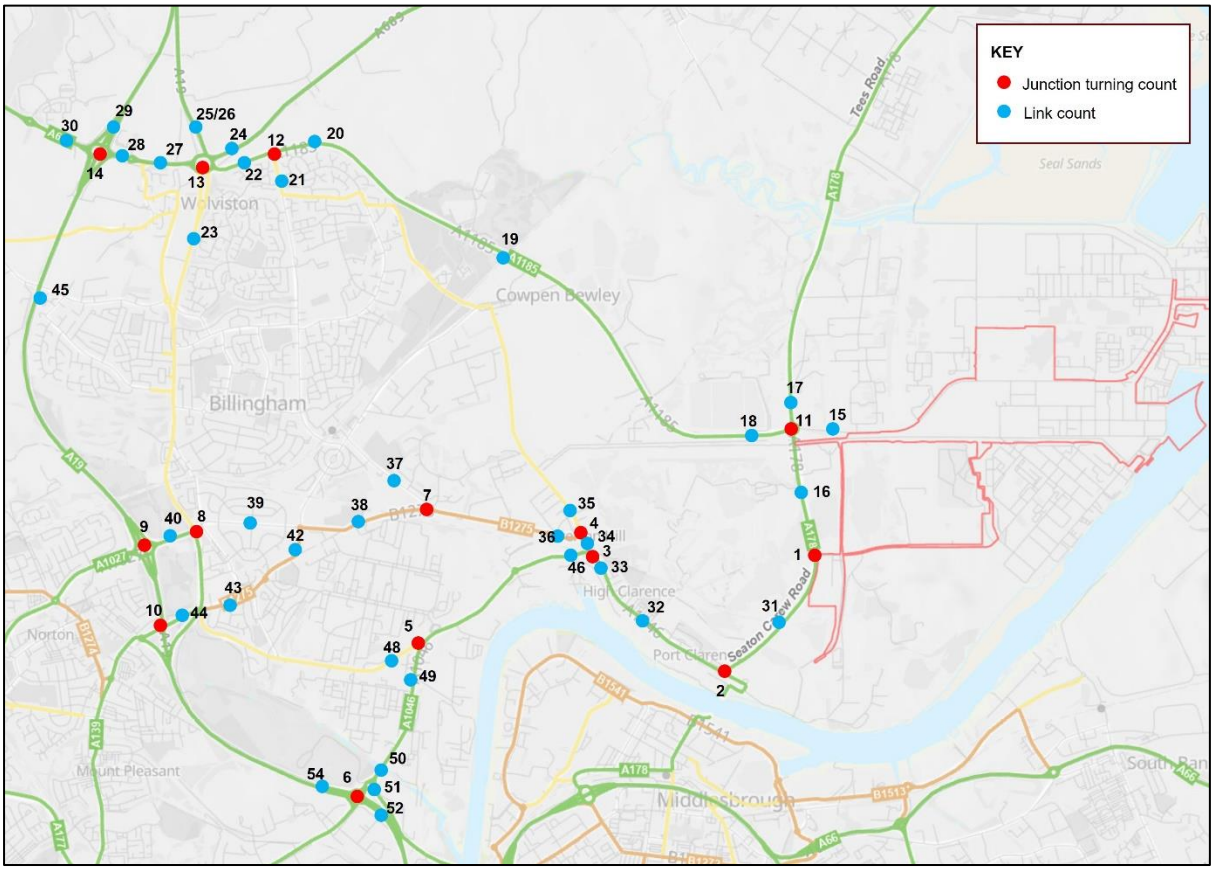
(PEIR Volume 2) and comprises the following junctions and connecting highway links as described in Table 4-1 (refer also to Inset 4-1).

Table 4-1 Traffic and Transport Study Area

Site Ref.	Name	Location	Type
1	Junction 1	A178, Seaton Carew Road/Huntsman Drive Junction	JTC
2	Junction 2	A1046, Port Clarence Road/A178, Seaton Carew Road Junction	JTC
3	Junction 3	A1046, Haverton Hill Road/A1046, Clarence Street/B1275, Hope Street Junction	JTC
4	Junction 4	B1275, Robson Street/Hope Street Junction	JTC
5	Junction 5	A1046, Haverton Hill Road/New Road Junction	JTC
6	Junction 6	A19 Portrack Interchange	JTC
7	Junction 7	B1275, Belasis Avenue/Greenwood Road/Coxwold Way Roundabout	JTC
8	Junction 8	A1027/Wolviston Road/Central Avenue Double Roundabout	JTC
9	Junction 9	A19 Norton Interchange	JTC
10	Junction 10	A19/A139 Junction	JTC
11	Junction 11	A1185/A178, Seaton Carew Road (Seal Sands Roundabout)	JTC
12	Junction 12	A1185/Marsh House Avenue Junction	JTC
13	Junction 13	A689/A1185/A19 Southbound Off-Slip Roundabout	JTC
14	Junction 14	A19/Wolviston Interchange	JTC
15	Link 1	Site access road (East of Seal Sands Roundabout)	ATC
16	Link 2	A178, Seaton Carew Road (Between Huntsman Drive and A1185/A178, Seaton Carew Road (Seal Sands Roundabout))	ATC
17	Link 3	A178, Seaton Carew Road (North of Seal Sands Roundabout)	ATC
18	Link 4	A1185 (Between A1185/A178, Seaton Carew Road (Seal Sands Roundabout) and Saltholme North Power Station))	ATC
19	Link 5	A1185 (Between Saltholme North Power Station and Cowpen Woodland)	ATC
20	Link 6	A1185 (Between Cowpen Woodland and Marsh House Avenue)	ATC

Site Ref.	Name	Location	Type
21	Link 7	Marsh House Avenue	ATC
22	Link 8	A1185 (Between Marsh House Avenue and A689, Stockton Road/A1185 Roundabout)	ATC
23	Link 9	Wolviston Road	ATC
24	Link 10	A689, Stockton Road	ATC
25	Link 11	A19/Wynyard Park Southbound Off-Slip	ATC
26	Link 12	A19 Wolviston Interchange Northbound On-Slip	ATC
27	Link 13	A689 (Between A689, Stockton Road/A1185 Roundabout and A689/Wolviston Services Roundabout)	ATC
28	Link 14	A689 (West of A689/Wolviston Services Roundabout)	ATC
29	Link 15	A19 Mainline (North of A19 Wolviston Interchange)	ATC
30	Link 16	A689, Coal Lane (West of A19 Wolviston Interchange)	ATC
31	Link 17	A178, Seaton Carew Road (Between A178 Seaton Carew Road/Huntsman Drive and A1046, Port Clarence	ATC
32	Link 18	A1046, Port Clarence Road (Adjacent to High Clarence Primary School)	ATC
33	Link 19	A1046, Clarence Street (East of A1046, Haverton Hill Road/B1275, Hope Street Signal Controlled Junction	ATC
34	Link 20	B1275, Hope Street (Between A1046, Haverton Hill Road/A1046, Clarence Street Junction and B1275	ATC
35	Link 21	Hope Street (North of B1275, Robson Street (Belasis Avenue))	ATC
36	Link 22	B1275, Belasis Avenue	ATC
37	Link 23	Greenwood Road (North of B1275, Belasis Avenue/Greenwood Road/Coxwold Way Roundabout)	ATC
38	Link 24	B1275, Belasis Avenue (Between Greenwood Road and Cowpen Lane)	ATC
39	Link 25	Central Avenue (Between Cowpen Lane and A1027/Wolviston Road/Central Avenue Double Roundabout)	ATC
40	Link 26	A1027 (Between A1027/Wolviston Road/Central Avenue Double Roundabout and A19 Norton Interchange)	ATC

Site Ref.	Name	Location	Type
41	Link 27	A1027 (West of A19 Norton Interchange)	ATC
42	Link 28	Cowpen Lane	ATC
43	Link 29	B1275 (Between Cowpen Lane and A139/A19 Southbound On-slip)	ATC
44	Link 30	A139	ATC
45	Link 31	A19 Mainline (Between A19 Wolviston Interchange and A19 Norton Interchange)	ATC
46	Link 32	A1046, Haverton Hill Road (Between A1046, Haverton Hill Road/Hope Street Junction and A1046	ATC
47	Link 33	A1046, Haverton Hill Road (Between A1046, Haverton Hill Road/SUEZ EfW Roundabout and New Road)	ATC
48	Link 34	New Road	ATC
49	Link 35	A1046, Haverton Hill Road (Between New Road and Able UK Head Office Access)	ATC
50	Link 36	A1046, Haverton Hill Road (East of A19 Portrack Interchange)	ATC
51	Link 37	A1032, Newport Bridge Approach Road	ATC
52	Link 38	A19 Mainline (South of A19 Portrack Interchange)	ATC
53	Link 39	A1046, Haverton Hill Road (West of A19 Portrack Interchange)	ATC
54	Link 40	A19 Mainline (North of A19 Portrack Interchange)	ATC



Inset 4-1 Traffic and Transport Study Area

4.2.7 The Study Area falls wholly within the STBC Boundary and includes access routes to National Highways Strategic Road Network (SRN).

4.2.8 Figure 18.2 (PEIR Volume 2) also shows the anticipated fixed routes for HGV movements during the Construction Phase.

4.3 Baseline Conditions

Site Location and Local Highway Network

4.3.1 The Proposed Development is located in Teesside, in the industrial area of Seal Sands, approximately 5km east of Billingham town centre and 4km north-east of Middlesbrough town centre. The Proposed Development is on the north bank of the River Tees and roughly 3km south-west of Teesmouth.

4.3.2 The Proposed Development is immediately bounded by the River Tees to the east and is surrounded by the Seal Sands industrial area. Further details are provided in Chapter 3: Project Description & Existing Environment (PEIR Volume 1).

4.3.3 The Main Site is connected to the public highway network via Seal Sands Road which joins Seaton Carew Road (A178) at Seal Sands Roundabout. From this roundabout, Seaton Carew Road (A178) runs north to Hartlepool and south to Port Clarence. The western arm of this roundabout links to the A1185 which connects to the trunk road network via the A689 and A19 north of Billingham. The A19 and A1(M) provide north-south links into the strategic road network. The A19 links to Hartlepool, Peterlee and Sunderland to the north, and to Thirsk and York and the A1(M) to the south.

Walking and Cycling Connections

4.3.4 Access to the Proposed Development is from the eastern arm of the Seal Sands roundabout which does not have footways. This arm is only public highway for a short distance and can only be used to access the private road to Seal Sands.

4.3.5 To the north of the A178, Seaton Carew Road/Huntsman Drive junction, there are footways in the immediate vicinity of the closest bus stops to the Proposed Development. The footway on the western side of the A178, Seaton Carew Road is only present within the proximity of the bus layby. A desk study indicates that this footway is overgrown with vegetation.

4.3.6 The footway on the eastern side of the A178, Seaton Carew Road is part of the England Coast Path (ECP). Locally, the ECP comprises a mixture of sealed surfaced path, un-sealed and loose material surfacing. The route of the ECP in the local area is shown on Figure 18.3 (PEIR Volume 2) and locally, runs between Hartlepool and Seaton Carew in the north and to Port Clarence and Middlesbrough to the south (via Haverton Hill Road and the A1032, Newport Bridge Approach Road).

4.3.7 In the wider Study Area, there are footways and streetlighting on all main routes that link the surrounding areas.

4.3.8 There is no cycling infrastructure in place along the site access road, however, the A178, Seaton Carew Road in the vicinity of the access is classed as an advisory cycle route. To the north, the advisory route links to a traffic-free route that runs through Saltholme nature reserve and links to Port Clarence.

4.3.9 To the south, the advisory route continues on the A1046, Port Clarence Road through Port Clarence and to Billingham (via the B1275, Belasis Avenue and Greenwood Road) and Cowpen Bewley (via Cowpen Bewley Road).

4.3.10 There is also a shared footway/cycleway along the A1046, Port Clarence Road through Port Clarence which continues on both sides of the carriageway along the majority of the A1046, Haverton Hill Road. The

shared footway/cycleway links to a wider network of routes at the A19 Portrack Interchange, including National Cycle Network (NCN) 14 to the north that links to Billingham in the north and Stockton-on-Tees to the west and to NCN 1 within Middlesbrough to the south, via the A1032, Newport Bridge Approach Road. Locally, NCN 14 runs between Hartlepool and Seaton Carew in the north, through Stockton-on-Tees to Darlington and NCN 1 runs between Redcar, Middlesbrough and Stockton-on-Tees.

4.3.11 NCN 65 connects to the NCN 1 within Middlesbrough and locally, provides connections to residential areas to the south of Middlesbrough, including Linthorpe, Acklam and Hemlington.

4.3.12 The Teesdale Way can be accessed from the A1032, Newport Bridge Approach Road. To the east of the A1032 Newport Bridge Approach Road, the route mostly runs along the south bank of the River Tees through Middlesbrough and South Bank to Coatham Sands. To the west of the A1032, Newport Bridge Approach Road, the route mostly runs along the north bank of the River Tees through Stockton-on-Tees, Eaglescliffe and Yarm.

4.3.13 The Transporter Bridge is designated as an advisory route that provides direct connections to NCN 1, 65 and The Teesdale Way. However, at the time of preparing this PEIR, the Transporter Bridge is not operational. As of November 2025, the Transporter Bridge has been added to Historic England's Heritage at Risk register and may see repairs in the future.

4.3.14 The only National Cycle Network (NCN) which may be impacted by the Proposed Development is NCN14. The NCN 14 runs along the A139 and the Bypass Road, north-east through Wolviston.

PRoW Network

4.3.15 A desk-study has been undertaken to identify PRoW within the Study Area which may need to be closed or diverted (temporarily or permanently) to manage any potential conflict between NMUs and development generated traffic.

4.3.16 There are four PRoW within 500m of the Proposed Development, including:

a. Footpath 31 which runs along the route of the pipeline before heading south-west towards Tees Dock Road and footpath 102/2A;

b. Footpath 102/2A (102/2A/1 – 102/2A/2) runs approximately south-west to north-east in parallel to the internal Teesport private access road before connecting to footpath 102/2 (102/2/1 - 102/2/3);

c. Footpath 102/2 (102/2/1 - 102/2/3) follows the alignment of a rail line in

parallel to footpath 102/2 (102/2/1 - 102/2/3); and

d. Bridleway 116/9 (116/9/1 - 116/9/2) follows the alignment of a rail line in parallel to footpath 102/02 (102/2/1 - 102/2/3).

4.3.17 The identified PRoW's sit outside the Traffic and Transport Study Area. This area has been omitted from the Study Area due to the limited number of vehicle movements forecast during the wastewater pipeline connection works.

4.3.18 Across the wider Study Area, there are multiple PRoW that intersect road links, this includes:

a. Public Byway Ref. BY 30 which crosses the A1185 (Link 5), running between Billingham Cemetery in the south to Cowpen Bewley Woodland Park in the north;

b. Footpath Ref. FP 8D which runs from Newton Bewley (within the Hartlepool local authority area), crosses the A1185 (Link 6) and runs south into residential estates to the north of Billingham;

c. Public Footpath Ref. FP 1 which runs north from the A689 (Link 13) and connects to Public Footpath FP 15;

d. Public Footpath Ref. FP 15 runs east/west crossing the A19 mainline (Link 15) at-grade in the west and the A19 mainline Off-Slip (Link 11) in the east;

e. A PRoW which runs from the A19 mainline Off-Slip (Link 11) east to Newton Bewley (within the Hartlepool local authority area). It is not known if this PRoW connects directly to Public Footpath Ref. FP 15; and

f. Public Footpath Ref. FP 27 runs to the east of Junction 9 and crosses the A1027 (Link 26), where it becomes FP 29. Public Footpath Ref. FP 29 wraps around the southern section of Junction 9, crossing the A19 mainline via a footbridge and links to a residential estate within Stockton on-Tees.

4.3.19 Figure 18.3 (PEIR Volume 2) includes an overview of the PRoW network for context.

Public Transport Network

4.3.20 The area surrounding Seal Sands is served by a network of public transport services. Stagecoach Northeast operates several bus routes in this region. Notably, route 1 connects Middlesbrough Bus Station to Hartlepool High

Tunstall.

4.3.21 The closest bus stops to the Proposed Development are situated on the A178, Seaton Carew Road, to the north of the A178, Seaton Carew Road/Huntsman Drive junction. This service operates seven days a week, providing regular access to residential, industrial, and natural areas, including the RSPB Saltholme Reserve.

4.3.22 Additionally, route 36 links Middlesbrough to Hartlepool, traversing areas like Billingham and Greatham. This route serves the Seal Sands Link Road and operates daily, ensuring connectivity across various communities.

4.3.23 The closest train stations to the Proposed Development are Middlesbrough Train Station and Billingham Train Station. Middlesbrough Train Station is over 3km from the Proposed Development. Access to the station would be via the Tees Transport Bridge but this is not currently operational. Billingham Train Station is over 5km from the Proposed Development.

Road Network

4.3.24 The primary roads, links, and routes that have the potential to be impacted by the Proposed Development include the following:

a. **A1185**: This operates as the primary route connecting the strategic road network (i.e. the A19 and A669) to the Proposed Development. Currently operating as an identified HGV priority route (confirmed by STBC), it consists of a two lane, 50mph carriageway in both directions, with a physical right turn island providing the northern access into the residential area of Billingham;

b. **A178/ Seaton Carew Road**: This north-south running 'A' road provides a direct link between Seaton to the north and Port Clarence to the south. It connects into a 4-arm roundabout with the A1185, providing direct access to / from the Proposed Development;

c. **A1046 / Port Clarence Road**: Located to the south-west of the Proposed Development, this link passes through a small area comprising residential and industrial activities. The route is also subject to a prohibition of goods vehicles exceeding 7.5 tonnes gross weight (TSRGD 622.1A) from the Hope Street junction in Haverton Hill to the junction with Seaton Carew Road east of Port Clarence. Importantly, it passes High Clarence Primary School and, as a high sensitivity receptor, it is expected to be included as part of the wider Traffic and Movement assessment;

d. **A1085 'Trunk Road'**: Located on the south side of the River Tees, this 'A' road runs from Middlesbrough to Redcar, passing through a largely industrialised area, including the main entrance to the British Steel

Lackenby site. It operates as a dual carriageway at its southern end, narrowing to a single lane, two-way carriageway north of the British Steel site entrance; and

e. **A1053**: Providing a connecting link between the A174 and the A1085, this 'A' road dual carriageway is subject to the 60mph national speed limit. While not located adjacent to any sensitive receptors, it is anticipated that it will operate as a key route for construction vehicles travelling to/from the construction works south of the River Tees.

4.3.25 Figure 18.1 (PEIR Volume 2) provides an overview of the local traffic network.

Road Safety

4.3.26 Accident data has been acquired from the CrashMap database. CrashMap functions as an online resource providing details on the location, date, and severity of recorded personal injury accidents across United Kingdom roads. Incidents are classified as 'Slight,' 'Serious,' or 'Fatal,' according to the level of injury sustained by the most severely affected individual. For this assessment, the baseline review covers a five-year period spanning from 2019 to 2023.

4.3.27 Table 4-2 provides details of the baseline accident data, focused on routes that will be used or affected by the proposed development.

Table 4-2 Accident Data Summary (Severity)

Location	Severity		
	Slight	Serious	Fatal
Seal Sand Roundabout/A1185	3	1	0
Seaton Carew Road	3	1	0
A1046 Port Clarence Road	1	3	0
Wolviston Interchange	9	0	0
A689 Roundabout	2	2	0
A689/A1185 Roundabout	6	0	0
B1275 / Greenwood Rd Roundabout	1	0	0
A1046 (Clarence Street/Haverton Hill Road/Hope Street)	7	3	0
A1032 (Newport Bridge Approach Rd)	2	2	0
Total	34	12	0

4.3.28 As shown above, a total of 46 accidents has been reported on links within the assessment area between 2019 and 2023. Of these, thirty-four have been reported as having slight casualty injuries, twelve having serious injuries, and zero resulting in fatalities.

Existing Traffic Flows

4.3.29 The baseline traffic flows have been derived from existing traffic counts available from an online database maintained by DfT. The location of these traffic counts is shown in Inset 4-1. For most locations this has resulted in the use of data from 2022 and 2024. For Links 21, 28, 29 and 34, only DfT traffic counts from 2009 were available.

4.3.30 Appendix 18g: Traffic Tables and Supporting Data (PEIR Volume 3) contains the DfT data and baseline traffic flows.

4.3.31 Baseline traffic flows were collected from a series of traffic counts that were obtained in June/July 2025. These were collected for three key junctions on the main HGV route to the Proposed Development, featuring the following:

a. Junction 1: A19/A689/A689 Coal Lane (Wolviston Interchange);

b. Junction 2: Car Park Access/A689; and

c. Junction 3: A19 Off Slip/A689 Stockton Road/A1185/Wolviston Road/A689/Wynyard Park.

4.3.32 Full details of these surveys, the survey specification, and the methodology used for collecting the data is presented in Appendix 18a: Base Traffic Survey Report (PEIR Volume 3).

4.4 Future Baseline

4.4.1 A future baseline will be established as part of the ES for the 2027 and 2030 assessment years associated with the Construction Phase. The future baseline takes into consideration traffic growth on the highway network and committed development.

Background Traffic Growth

4.4.2 As the majority of available traffic data is historic, growth rates have been applied where necessary. The current year of 2025 has been adopted as the baseline year.

4.4.3 TEMPro traffic growth factors have also been applied to obtain future year figures for 2027 and 2030. Average growth factors have been compiled using TEMPro 8.1 for Stockton-on-Tees, as summarised in Table 4-3. These growth factors were determined using the following criteria in TEMPro:

a. Years: Base year of 2011 (earliest available) and 2019 and future years of 2027 and 2030;
b. Area: Stockton-on-Tees;
c. Scenario: 'Core';
d. Trip End: Origin/Destination; and
e. Time Period: Average Day/Average Weekday.

Table 4-3 TEMPro Growth Factors (Daily)

Location Seal Sand Roundabout/A1185	Severity			
	Average Weekday		Average Day	
	Origin	Destination	Origin	Destination
2011-2025	1.0034	1.0028	0.9687	0.9681
2019-2025	1.0491	1.0489	1.049	1.0488
2025-2027	1.0028	1.0028	1.0139	1.0139
2025-2030	1.0291	1.0291	1.0292	1.0292

Committed Development

4.4.4 There may be the potential for cumulative impacts associated with the Proposed Development and from any other committed developments during the Construction Phase and Operation Phase. Therefore, an assessment of the significance of the Cumulative Effects will be undertaken in the context of the potential interactions associated with the Proposed Development.

4.4.5 To ensure all committed developments are accounted for, it is requested that STBC and National Highways provide a list of their committed development sites and highway improvements for further review as part of the cumulative impacts of the Proposed Development. The addition of TEMPro and committed development can result in double counting therefore this will be discussed and agreed with STBC and RCBC and National Highways through subsequent consultation.

4.4.6 The methodology for establishing a Long List and Short List is set out in Chapter 23: Cumulative and Combined Effects (PEIR Volume 1) and both lists will be developed for the ES. For this PEIR, no committed developments have been included.

4.5 Embedded Design, Mitigation and Enhancement Measures

Construction Phase

4.5.1 Relevant design, mitigation and enhancement measures will be identified in the ES, and these will include:

a. The Applicant will embed measures to promote sustainable modes of transport into the design of the Proposed Development. This is with a focus to mitigate against any likely significant environmental Traffic and Transport effects arising during the Construction Phase and Operation Phase of the Proposed Development;

b. Construction Traffic Management Plan (CTMP) which will provide details of procedures for construction related traffic, including number of vehicles; routes; frequency and timing of movements; worker hours and shift patterns; Construction Laydown Area(s) and parking; and AILs; and

c. Construction Worker Travel Plan (CWTP) which focuses on minimising the traffic impacts associated with construction workers travelling to and from Proposed Development.

4.5.2 These would sit either as an appendix to, or alongside the outline Construction Environmental Management Plan (oCEMP).

Operation Phase

4.5.3 Relevant design, mitigation and enhancement measures will be identified in the ES, and these may include:

a. Workplace Travel Plan (WTP) – If required, a WTP will be produced which will represent a long-term travel management strategy, detailing specific measures, designed to encourage staff and visitors to travel by more sustainable and active transport options.

5. Sensitive Receptors

5.1 Overview

5.1.1 This section outlines the sensitivity of highway links within the Study Area.

5.1.2 A desktop exercise has been undertaken to classify the sensitivity of the highway links within the Study Area. The classification of the link sensitivity is based on guidance contained in DMRB LA104 and EATM taking into consideration sensitive receptors assigned to the link and the receptor environment. For example, if the route passes a school, care home or similar it would likely have a higher sensitivity to change in traffic flows due to the presence of vulnerable users. Table 5-1 identifies the highway links within the Study Area, the assigned sensitivity rating, and the rationale.

Table 5-1 Sensitivity of Receptors (NMUs)

Link	Description	Link Sensitivity	Rationale
1	Site access road (East of Seal Sands Roundabout)	Low	The unclassified site access road, known as Seal Sands Road, is a single carriageway road and is subject to a 40mph speed limit. The route becomes private just west of the Main Site. There are no footways along the entirety of the route. The route formerly provided access to the disused Tees Valley 1 and 2 waste to energy plants within the Seal Sands area, however they are now accessed from Huntsman Drive to the south.
2	A178, Seaton Carew Road (Between Huntsman Drive and A1185/A178, Seaton Carew Road (Seal Sands Roundabout))	Low	This section of the A178, Seaton Carew Road is a single carriageway road, subject to the national speed limit. There are no footways along the route, however, ECP runs along the eastern side of the A178, Seaton Carew Road. The local bus stops are located on the A178, situated within laybys. The section of the A178, Seaton Carew Road in the vicinity of the A178, Seaton Carew Road/Huntsman Drive junction is lit.
3	A178, Seaton Carew Road (north of Seal Sands Roundabout)	Low	This section of the A178, Seaton Carew Road is a single carriageway road, subject to the national speed limit. The ECP runs along the eastern side of the A178, Seaton Carew Road and crosses the road prior to the road crossing Greatham Creek. There is no streetlighting along this route, except within the vicinity of the Seal Sands Roundabout. There is no direct frontage onto this section of the A178, Seaton Carew Road, with a limited number of accesses that serve small industrial activities.
4	A1185 (Between A1185/A178, Seaton Carew Road (Seal Sands Roundabout) and Saltholme North Power Station)	Low	This section of the A1185 is a single carriageway road, subject to the national speed limit. There are no footways or streetlighting along this route or direct frontage. There are a number of maintenance access which serve reservoirs and adjacent agricultural fields.
5	A1185 (Between Saltholme North Power Station and Cowpen Woodland)	Medium	This section of the A1185 is a single carriageway road, subject to the national speed limit. There are no footways or streetlighting along this route or direct frontage. The A1185 runs between Billingham Cemetery and Saltholme North

Link	Description	Link Sensitivity	Rationale
			Power Station, bisecting Cowpen Bewley Woodland Park and is linked by PRoW BY 30.
6	A1185 (Between Cowpen Woodland and Marsh House Avenue)	Medium	This section of the A1185 is a single carriageway road, subject to the national speed limit. There are no footways or streetlighting along this route or direct frontage. There are a number of field gate accesses serving adjacent agricultural routes along this link. PRoW FP 8D runs from Newton Bewley (within the Hartlepool local authority area), crosses the A1185 and runs south into residential estates to the north of Billingham.
7	Marsh House Avenue	Medium	This link is a dual carriageway route, subject to a 40mph speed limit, has streetlighting and no direct frontage. There are residential estates on both sides of this link and there is an uncontrolled pedestrian crossing point linking both estates.
8	A1185 (Between Marsh House Avenue and A689, Stockton Road / A1185 Roundabout)	Low	This link is a dual carriageway route, subject to a 50mph speed limit, has streetlighting and no direct frontage.
9	Wolviston Road (South of A689 Roundabout)	Low	This link is a dual carriageway route, subject to a 50mph speed limit and forms a set of slip roads that link to the A689/A1185 roundabout. Both carriageways have no footways and are lined with dense vegetation/trees on both sides. There is streetlighting on the northbound carriageway on the approach to the roundabout.
10	A689 Stockton Road	Low	This link is a dual carriageway route, subject to the national speed limit and has streetlighting on the approach to the A689/A1185 roundabout. There is no street lighting and no direct frontage on to the A689.
11	A19 / Wynyard Park Southbound Off-Slip	Medium	This link is a southbound Off-Slip from the A19 and connects to the A689/A1185 roundabout. The route is subject to national speed limit; there is no direct frontage and there are a number of field gate access to adjacent agricultural fields. To the west of the link, PRoW FP 15 runs west from this link, crossing the A19 mainline (Link 15). There is a separate PRoW which runs from this link east

Link	Description	Link Sensitivity	Rationale
			to Newton Bewley (within the Hartlepool local authority area). It is not known if this PRoW connects directly to FP 15.
12	A19 Wolviston Interchange Northbound On-Slip	Medium	This link in the northbound on-slip from the A19 Wolviston Interchange to the A19 northbound carriageway. There is a single controlled pedestrian crossing at the beginning of the link. There are no direct accesses located on this link and it is subject to the national speed limit.
13	A689 (Between A689, Stockton Road / A1185 Roundabout and A689 / Wolviston Services Roundabout)	Low	This link is a dual carriageway route, subject to a 40mph speed limit and has streetlighting throughout. There are no footways or direct frontage on to the A689. There are signal-controlled crossing facilities located on both carriageways at the junction with Coal Lane.
14	A689 (West of A689 / Wolviston Services Roundabout)	Low	This link is a dual carriageway route, subject to a 40mph speed limit and has streetlighting throughout. There are no footways or direct frontage on this link.
15	A19 Mainline (North of A19 Wolviston Interchange)	Medium	This is a dual-carriageway route subject to a 70mph speed limit and part of the SRN. PRoW FP 15 runs east/west and crosses the A19 mainline at-grade.
16	A689 Coal Lane (West of A19 Wolviston Interchange)	Medium	This link is a dual carriageway route, subject to a 50mph speed limit and has streetlighting throughout. There are no footways or direct frontage on this link. There is a bus stop located within a layby on the eastern link with a footway connecting to Wynyard Park. There is also a field gate access located on both sides of the carriageway serving agricultural fields.
17	A178 Seaton Carew Road (Between Huntsman Drive and A1046 Port Clarence Road)	Low	This section of the A178, Seaton Carew Road is a single carriageway road, subject to the national speed limit. There are no footways along the route, however, ECP runs along the eastern side of the A178, Seaton Carew Road. The section of the A178, Seaton Carew Road in the vicinity of the A178, Seaton Carew Road/Huntsman Drive junction is lit.

Link	Description	Link Sensitivity	Rationale
18	A1046 Port Clarence Road (Adjacent to High Clarence Primary School)	High	This link forms the main route through the settlement of Port Clarence and is subject to a 30mph speed limit. There is a footway running along the north side of the carriageway for the entirety of the link and a shared-footway cycle on the south. There are a number of residential streets that connect to this link and there are various uses that directly front this link, including residential dwellings, local amenities and a primary school. Local bus stops are also present on this route. The route is also subject to a prohibition of goods vehicles exceeding 7.5 tonnes gross weight (TSRGD 622.1A).
19	A1046 Clarence Street (East of A1046, Haverton Hill Road / B1275, Hope Street Junction)	Medium	This link is subject to a 40mph speed limit, has streetlighting on both sides of the carriageway and forms the eastern arm of the A1046, Clarence Road/B1275 Hope Street signal-controlled junction. There is a footway on the north side of the link and a shared/footway cycleway on the south. There are various direct accesses to light industrial units on this link.
20	B1275 Hope Street (Between Haverton Hill Road / Clarence Street Junction and B1275 Robson Street)	Medium	This link is subject to a 40mph speed limit, has streetlighting and footways on both sides of the carriageway and forms the northern arm of the A1046, Haverton Hill Road/A1046, Clarence Street signal-controlled junction. There are various direct accesses to light industrial units on this link.
21	Hope Street (North of B1275, Robson Street (Belasis Avenue))	Low	The majority of this link is subject to a 40mph speed limit, with streetlighting and footways on both sides of the carriageway. There are various direct accesses to light industrial units on this link along with junctions serving other industrial units. Continuing north, this link becomes subject to the national speed limit, with no footways or streetlighting.
22	B1275 Belasis Avenue	Low	This link is subject to a 40mph speed limit, has streetlighting and footways on the south side of the carriageway. The link follows a relatively straight alignment with no direct frontage and there is one main T-junction on the link with Nelson Avenue, which serves a food manufacturing facility.
23	Greenwood Road (North of B1275, Belasis Avenue / Greenwood Road / Coxwold Way Roundabout)	High	The majority of this link is subject to a 40mph speed limit, becoming 30mph on the approach to Billingham where residential dwellings take direct access from the link. There are on-carriageway cycle lanes, footways and streetlighting located on both sides of the carriageway.

Link	Description	Link Sensitivity	Rationale
24	B1275 Belasis Avenue (Between Greenwood Road and Cowpen Lane)	Low	This link is subject to a 40mph speed limit, has streetlighting and footways on both sides of the carriageway. There is no direct frontage on this link and two T-junctions, one to the north and south which serve industrial/manufacturing facilities.
25	Central Avenue (Between Cowpen Lane and A1027 / Wolviston Road / Central Avenue Double Roundabout)	High	This link is a dual carriageway route subject to a 30mph speed limit. There are footways and streetlighting on both sides of the carriageway and both sides of the carriageway are fronted by terraced and semi-detached residential properties.
26	A1027 (Between A1027 / Wolviston Road / Central Avenue Double Roundabout and A19 Norton Interchange)	Medium	This link is a dual carriageway route subject to a 40mph speed limit. There is a shared footway cycleway on the north side of the carriageway and a separate footway and cycleway on the south. Both are separated from the running lanes by crash barriers. Streetlighting is present throughout this link. There is an access from the eastbound carriageway which serves Billingham Beck Valley Country Park and PRoW cross the link to the east of Junction 9. To the north of the link, the PRoW is identified as FP 27 and becomes FP 29 to the south of the link.
27	A1027 (West of A19 Norton Interchange)	Low	This link is a dual carriageway route subject to a 40mph speed limit. There are footways and streetlighting on both sides of the carriageway. There are no direct accesses or junctions that connect to this link.
28	Cowpen Lane	High	The initial section of this link is dual carriageway, subject to a 30mph speed limit with footways and streetlighting situated on both sides of the carriageway. Travelling south, the link becomes single carriageway and is known as the B1275 Belasis Avenue. There are two pedestrian access points access to Billingham South Community Primary School located on this link, along with access to light industrial units and residential dwellings located adjacent to the link.
29	B1275 (Between Cowpen Lane and A139 / A19 Southbound On-slip)	High	This link forms the main route through the south of Billingham and is subject to a 30mph speed limit. There are footways and streetlighting along the entirety of this link. There are on-carriageway cycle routes on both sides of the carriageway for the majority of the link. There are a number of junctions that connect to residential dwellings, along with residential dwellings and local amenities directly front this link. Local bus stops are also present on this route.

Link	Description	Link Sensitivity	Rationale
30	A139	Low	This link connects two roundabouts that form Junction 10 within the Study Area. This link is subject to a 40mph speed limit, is a single carriageway route with streetlighting and shared footway cycleways on both sides of the carriageway. There is no direct frontage on this link but there is a junction on the northern side which links to a network of footpaths.
31	A19 Mainline (Between A19 Wolviston Interchange and A19 Norton Interchange)	Medium	This link is a dual carriageway route with three lanes in each direction, subject to the national speed limit and is part of the SRN.
32	A1046, Haverton Hill Road (Between A1046, Haverton Hill Road / Hope Street Junction and A1046 / SUEZ EfW Roundabout)	Medium	These links are single carriageway route with a 40mph limit. The A1046 is a main distributor route linking the A19 to a number of industrial and commercial premises. There are shared footway cycleways on both sides of the carriageway for the majority of the A1046, Haverton Hill Road. Local bus stops are also present on this route.
33	A1046, Haverton Hill Road (Between A1046, Haverton Hill Road / SUEZ EfW Roundabout and New Road)	Medium	
34	New Road	Medium	New Road is a single carriageway route subject to a 40mph speed limit. The route is lit and there is a footway on the northern side of the carriageway. There is no direct frontage on New Road, but there are a number of junctions which serve industrial/manufacturing premises. Local bus stops are also present on this route.
35	A1046, Haverton Hill Road (Between New Road and Able UK Head Office Access)	Medium	These links are single carriageway route with a 40mph speed limit. The A1046, Haverton Hill Road is a main distributor route linking the A19 to a number of industrial and commercial premises. There are shared footway cycleways on both

Link	Description	Link Sensitivity	Rationale
36	A1046, Haverton Hill Road (East of A19 Portrack Interchange)	Medium	sides of the carriageway for the majority of the A1046, Haverton Hill Road. Local bus stops are also present on this route.
37	A1032, Newport Bridge Approach Road	Medium	The initial section of this link is dual carriageway and subject to a 40mph speed limit. Streetlighting is provided throughout the link and there is a shared footway/cycleway on the eastern side of the link. Travelling south, the link is a single carriageway with a 30mph speed limit travelling over the Newport Bridge.
38	A19 Mainline (South of A19 Portrack Interchange)	Medium	This link is a dual carriageway route with three lanes in each direction, subject to the national speed limit and is part of the SRN.
39	A1046, Haverton Hill Road (West of A19 Portrack Interchange)	Medium	This link is a dual carriageway route, subject to a 40mph speed limit and is the main route through North Tees Industrial Estate. There is a shared footway/cycleway on both sides of the carriageway and streetlighting is present throughout. Local bus stops are also present on this route.
40	A19 Mainline (North of A19 Portrack Interchange)	Medium	This link is a dual carriageway route with three lanes in each direction, subject to the national speed limit and is part of the SRN.

6. Likely Impacts and Effects of the Proposed Development

6.1 Overview

6.1.1 This section details the preliminary assessment of significant effects of the Proposed Development during the Construction Phase and Operation Phase and considers the embedded design, mitigation and enhancement measures detailed in Section 4.6.

6.1.2 To assess the potential likely significant effects on receptors, the current estimated construction and operation related traffic has been assigned to the network in accordance with the methodology previously outlined in this technical Chapter, with the full details and analysis underpinning the trip generation, distribution and assignment during the Construction Phase and Operation Phase is included in Appendix 18b: Traffic Assumptions (PEIR Volume 3).

6.1.3 In summary, Appendix 18b: Traffic Assumptions (PEIR Volume 3) indicates that at the peak of construction the Proposed Development could attract up to 1,076 car/LGV per day (2,152 two-way) and 180 HGVs per day (360 two-way). Once operational, the Proposed Development could attract up to 433 car/LGV per day and 90 HGVs per day (180 two-way).

6.1.4 The construction traffic has been added to the 2030 peak construction year baseline. The percentage increase has then been calculated, as shown in Appendix 18e: Preliminary Assessment of Construction Phase Effects (PEIR Volume 3).

6.1.5 It is considered that the Decommissioning Phase impacts are anticipated to be no worse than those during the Construction Phase following the implementation of a DTMP for the works. The Construction and Decommissioning Phases have therefore been assessed together.

6.2 Assessment of Construction/Decommissioning Phase Effects

6.2.1 The following sections provide a preliminary assessment of the effects in relation to severance, NMU amenity, and fear and intimidation with reference to the change in traffic flows, driver delay, road safety, and AIL.

Severance and Pedestrian Delay (incorporating delay to all non-motorised users)

6.2.2 Severance is the perceived division that can occur within a community when it becomes separated from places and other people. The severance may be caused by a physical barrier created by a development or by the difficulty of crossing roads due to an increase in traffic flow.

6.2.3 The results in Appendix 18e: Preliminary Assessment of Construction Phase Effects (PEIR Volume 3) show that the predicted magnitude of change in total traffic flows associated with the Construction Phase of the Proposed Development results in less than 30% (negligible) change in total traffic flows on the majority of links. Four links are anticipated to experience total traffic flows greater than 30% change (Links 1, 4, 5 and 6). As this is a negligible or minor degree of change on links of low or medium receptor sensitivity, this is defined as of neutral or slight significance.

6.2.4 Overall, the significance of effect of severance is classified as Neutral or Slight Adverse (Not Significant) on all links.

Non-motorised User Amenity

6.2.5 NMU amenity is broadly defined as the relative pleasantness of a journey, and is considered to be affected by traffic flow, traffic composition, pavement width and separation between vehicles and NMUs. The IEMA EATM guidelines suggest that a doubling or halving of total traffic flow or the HGV composition could lead to perceptible change upon NMU amenity.

6.2.6 The results in Appendix 18e: Preliminary Assessment of Construction Phase Effects (PEIR Volume 3) show that the predicted change in total traffic flows associated with the Construction Phase of the Proposed Development results in less than 30% (negligible) change in total traffic flows on the majority of links. Four links are anticipated to experience total traffic flows greater than 30% change (Links 1, 4, 5 and 6). Link 1 is anticipated to experience a moderate degree of change, however, as this is in an area of low environmental sensitivity, this is defined as of slight significance. Furthermore, Links 4, 5 and 6 are anticipated to experience a minor degree of change in areas of low or medium environmental sensitivity, this is also defined as of slight significance.

6.2.7 Appendix 18e: Preliminary Assessment of Construction Phase Effects (PEIR Volume 3) also shows that the predicted change in HGV traffic flows associated with the Construction Phase of the Proposed Development results in no change, or less than 30% (negligible) on all links apart from Link 1.

6.2.8 The significance of effect of NMU amenity is classified as Neutral or Slight

Adverse (Not Significant) on all links.

Fear and Intimidation

6.2.9 A further effect that traffic may have on pedestrians is fear and intimidation, which is dependent on the following factors: the volume of traffic, its HGV composition, its proximity to people or the lack of protection caused by factors such as narrow pavement widths.

6.2.10 The results in Appendix 18e: Preliminary Assessment of Construction Phase Effects (PEIR Volume 3) show that the predicted change in total traffic flows associated with the Construction Phase of the Proposed Development results in no step change (negligible) on all links. Appendix 18e: Preliminary Assessment of Construction Phase Effects (PEIR Volume 3) also shows that the predicted change in HGV traffic flows associated with the Construction Phase of the Proposed Development results in no step change (negligible) on all links.

6.2.11 The significance of effect of fear and intimidation is classified as Neutral or Slight Adverse (Not Significant) on all links.

Public Transport

6.2.12 The impact of the Proposed Development on the public transport network and effect to public transport users will be grouped with driver delay and considered together.

Driver Delay

6.2.13 Traffic delay will be assessed as part of the ES following operational assessments of the junctions within the Study Area during the AM and PM peak hours.

Road Safety

6.2.14 Following a preliminary assessment of publicly available accident data within the Study Area, it is considered that the frequency, severity, and spatial distribution of collision does not represent a pattern that indicates there are inherent road safety issues within the Study Area.

6.2.15 Notwithstanding this, a full review, including an analysis of clusters, HGV movements and Killed or Seriously Injured (KSIs) will be undertaken in the ES for all links and junctions within the Study Area. This will ensure a comprehensive road safety analysis is undertaken which is informed by the peak number of vehicle movements in the peak hour periods and daily movements for the Construction Phase.

6.2.16 It is considered that the traffic impacts and subsequent effects during the

Construction Phase would be managed through the preparation of a CWTP and CTMP.

6.2.17 If there are any areas within the Study Area where there are underlying road safety issues that could be exasperated by traffic movements associated with the Proposed Development, then appropriate mitigation measures will be proposed.

Abnormal Indivisible Loads

6.2.18 At this stage, the size and number of AIL movements are not known, nor is the type of vehicle required to be used. It is likely that the AILs will be imported directly to the Main Site via ship or via the A1185 by HGV.

6.2.19 The ES will confirm the worst-case number of abnormal loads required, the route, and the types of vehicles required. Any mitigation measures required to facilitate the delivery of abnormal loads will be detailed in the ES and any resultant likely significant effects assessed. Any assessment will be proportionate.

6.3 Assessment of Operation Phase Effects

6.3.1 Appendix 18f: Preliminary Assessment of Operation Phase Effects (PEIR Volume 3) contains a preliminary assessment of effects of the change of traffic flows on links within the Study Area for severance and pedestrian delay (incorporating delay to all NMUs), NMU amenity and fear and intimidation.

Severance and Pedestrian Delay (incorporating delay to all non-motorised users)

6.3.2 Severance is the perceived division that can occur within a community when it becomes separated from places and other people. The severance may be caused by a physical barrier created by a development or by the difficulty of crossing roads due to an increase in traffic flow.

6.3.3 The results in Appendix 18f: Preliminary Assessment of Operation Phase Effects (PEIR Volume 3) show that the predicted change in total traffic flows associated with the Operation Phase of the Proposed Development results in less than 30% (negligible) change in total traffic flows on all links.

6.3.4 The significance of effect of severance is classified as Neutral or Slight Adverse (Not Significant) on all links.

Non-motorised User Amenity

6.3.5 NMU amenity is broadly defined as the relative pleasantness of a journey, and is considered to be affected by traffic flow, traffic composition,

pavement width and separation between vehicles and pedestrians. The IEMA EATM guidelines suggest that a doubling or halving of total traffic flow or the HGV composition could lead to perceptible change upon NMU amenity.

6.3.6 The results in Appendix 18f: Preliminary Assessment of Operation Phase Effects (PEIR Volume 3) show that the predicted change in total traffic flows associated with the Operation Phase of the Proposed Development results in less than 30% (negligible) change in total traffic flows on all links. Appendix 18f: Preliminary Assessment of Operation Phase Effects (PEIR Volume 3) also shows that the predicted change in HGV traffic flows associated with the Operation Phase of the Proposed Development results in no change, or less than 30% (negligible) on all links.

6.3.7 The significance of effect on NMU amenity is classified as Neutral or Slight Adverse (Not Significant) on all links.

Fear and Intimidation

6.3.8 A further effect that traffic may have on pedestrians is fear and intimidation, which is dependent on the following factors: the volume of traffic, its HGV composition, its proximity to people or the lack of protection caused by such factors as narrow pavement widths.

6.3.9 The results in Appendix 18f: Preliminary Assessment of Operation Phase Effects (PEIR Volume 3) show that the predicted change in total traffic flows associated with the operation phase of the Proposed Development results in no step change (negligible) on all links. Appendix 18f: Preliminary Assessment of Operation Phase Effects (PEIR Volume 3) also shows that the predicted change in HGV traffic flows associated with the Operation Phase of the Proposed Development results in no step change (negligible) on all links.

6.3.10 The significance of effect of fear and intimidation is classified as Neutral or Slight Adverse (Not Significant) on all links.

Public Transport

6.3.11 The impact of the Proposed Development on the public transport network and effect to public transport users will be grouped with driver delay and considered together.

Driver Delay

6.3.12 In addition to the preliminary quantified assessment of effects set in Appendix 18f: Preliminary Assessment of Operation Phase Effects (PEIR Volume 3), traffic delay will be fully assessed as part of the ES following

operation assessments of the junctions within the Study Area during the AM and PM peak hours. Impact to emergency services within the Study Area, namely Billingham Community Fire Station will also be fully assessed as part of the ES.

Road Safety

6.3.13 Following a review of PIC within the Study Area, it is considered that the frequency, severity, and spatial distribution of collision does not indicate a pattern that indicates there are inherent road safety issues within the Study Area. Notwithstanding this, a full review, including an analysis of clusters, HGV movements and KSIs will be undertaken in the ES for all links and junctions within the Study Area. This will ensure a comprehensive road safety analysis is undertaken which is informed by the peak number of vehicle movements in the peak hour periods and daily movements for the Construction and Operation Phase.

7. Additional Design, Mitigation and Enhancement Measures

7.1 Overview

7.1.1 This section outlines the requirements for additional design, mitigation, or enhancement measures for the Proposed Development throughout the Construction Phase and Operation Phase.

7.2 Construction Phase

7.2.1 At this stage it is not anticipated that there will be a requirement for additional design, mitigation, or enhancement measures.

7.3 Operation Phase

7.3.1 Relevant design, mitigation and enhancement measures will be identified in the ES, following an assessment of any likely significant environmental Traffic and Transport effects.

7.3.2 At this stage it is not anticipated that there will be a requirement for additional design, mitigation, or enhancement measures.

8. Monitoring

8.1.1 Further details in relation to potential monitoring requirements will be provided in the ES.

9. Residual Effects and Conclusions

9.1 Summary of Residual Effects

9.1.1 Table 9-1 summarises the residual effects associated with the Proposed Development.

Table 9-1 Summary of the Residual Effects for Traffic and Transport

Description of the Effect	Sensitive Receptor	Significance of effect with Embedded Mitigation	Additional Design, Mitigation, enhancement Measure	Residual Effect
Construction/Decommissioning Phase				
Severance and Pedestrian Delay (incorporating delay to all NMUs)	Highway Links/ PRoW (NMU)	Neutral or Slight Adverse (Not Significant)	N/A	Neutral or Slight Adverse (Not Significant)
Pedestrian Amenity	Highway Links/ PRoW (NMU)	Neutral or Slight Adverse (Not Significant)	N/A	Neutral or Slight Adverse (Not Significant)
Fear and Intimidation	Highway Links/ PRoW (NMU)	Neutral or Slight Adverse (Not Significant)	N/A	Neutral or Slight Adverse (Not Significant)
Public Transport Network	Public Transport Users	The assessment will be identified and presented as part of the ES and TA.		
Driver Delay	Highway Links/ Junctions (motorised users)	The assessment will be identified and presented as part of the ES and TA.		
Road Safety	Highway Links/ Junctions (motorised users)	The assessment will be identified and presented as part of the ES and TA.		
Road Safety Audit	Highway Links/ Junctions (motorised users)	The assessment will be identified and presented as part of the ES and TA.		
Hazardous Loads	Highway Links/ Junctions	The assessment will be identified and presented as part of the ES and TA.		

Description of the Effect	Sensitive Receptor	Significance of effect with Embedded Mitigation	Additional Design, Mitigation, enhancement Measure	Residual Effect
	(motorised users)			
Operation Phase				
Severance and Pedestrian Delay (incorporating delay to all NMUs)	Highway Links/ PRoW (NMU)	Neutral or Slight Adverse (Not Significant)		
Pedestrian Amenity	Highway Links/ PRoW (NMU)	Neutral or Slight Adverse (Not Significant)		
Fear and Intimidation	Highway Links/ PRoW (NMU)	Neutral or Slight Adverse (Not Significant)		
Public Transport Network	Public Transport Users	The assessment will be identified and presented as part of the ES and TA.		
Driver Delay	Highway Links/ Junctions (motorised users)	The assessment will be identified and presented as part of the ES and TA.		
Road Safety	Highway Links/ Junctions (motorised users)	The assessment will be identified and presented as part of the ES and TA.		
Road Safety Audit	Highway Links/ Junctions (motorised users)	The assessment will be identified and presented as part of the ES and TA.		
Hazardous Loads	Highway Links/ Junctions (motorised users)	The assessment will be identified and presented as part of the ES and TA.		

9.1.2 It is anticipated that there will be neutral or slight residual Traffic and Transport effects associated with the Proposed Development during construction, operation, or decommissioning. This would be subject to further analysis in the ES.

9.2 Next Steps

9.2.1 The Traffic and Transport effects will be detailed and scoped with STBC, RCBC, and National Highways to agree the transport parameters to be fully assessed in the Traffic and Transport Chapter in the ES. Further assessment work will be undertaken to address the uncertainties contained in this PEIR.

9.2.2 The final calculation of vehicle trips generated by construction vehicles and construction workers (including profiling) will be carried out.

9.2.3 The theoretical capacity of existing junctions within a Study Area agreed by STBC and National Highways will be undertaken.

9.2.4 A full review of committed development and cumulative impacts will be carried out and reported in the ES.

9.2.5 It is proposed that the following documents will be produced as part of the DCO application:

a. ES – Traffic and Transport Chapter;
b. Transport Assessment (TA);
c. Outline Construction Traffic Management Plan (CTMP); and
d. Construction Worker Travel Plan (CWTP).

9.2.6 A Statement of Common Ground (SoCG) will be prepared in relation to the Traffic and Transport impacts with the relevant highway authorities.

9.3 Limitations and Assumptions

9.3.1 The following limitations and assumptions have been identified:

a. The information provided in this PEIR is preliminary; the final assessment of likely significant effects will be reported in the ES. This PEIR has been produced to fulfil the Applicant's consultation duties and enable consultees to develop an informed view of the likely significant effects of the Proposed Development, and comment on this during statutory consultation, before the design of the Proposed Development is finalised and taken forward to submission of the application for development consent.
b. The Proposed Development design is still evolving and this PEIR is based on the best available information at the time of writing. Traffic generation assumptions presented within this Chapter provide a high level, robust assessment of the likely worst-case. Further refinement of the traffic generation estimation will be undertaken as the design details are progressed.

9.3.2 The 'Construction Phasing' and associated construction worker profile will

be developed with the Applicant. This will feed into discussions regarding assessment scenarios and will be shared with the highway authorities.

9.3.3 The scope of the Traffic and Transport assessment has not yet been discussed with Stockton-on-Tees Borough Council, Redcar and Cleveland Borough Council, Middlesbrough Borough Council or National Highways. This will be undertaken prior to the preparation of the ES.

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