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PLATES

15.0 TRAFFIC AND TRANSPORT

15.1 Introduction

15.1.1 This chapter of the Preliminary Environmental Information (PEI) Report identifies the potential impacts and effects on traffic and transport as associated with the Proposed Development.

15.1.2 This chapter is supported by the following figures (PEI Report, Volume II):

- Figure 15-1: Traffic Study Area;
- Figure 15-2: Heavy Goods Vehicle (HGV) Routes to and from the Main Site;
- Figure 15-3: Traffic Count Locations; and
- Figure 15-4: Traffic Routes.

15.2 Legislation and Planning Policy Context

15.2.1 This section outlines planning policy relating to traffic and transport.

Planning Policy Context

National Planning Policy

National Policy Statement (NPS) for Energy (EN-1) (2011)

15.2.2 The National Policy Statement (NPS) (Department for Energy and Climate Change (DECC), 2011a) was published in 2011. Section 5.13 of the NPS outlines planning policy for traffic and transport, including guidance on undertaking relevant parts of an environmental impact assessment (EIA) (which has been taken into account in producing this PEI Report). The most relevant paragraphs for the transport assessment are paragraphs 5.13.2 to 5.13.4 which state:

> *"5.13.2 The consideration and mitigation of transport impacts is an essential part of Government's wider policy objectives for sustainable development as set out in Section 2.2 of this NPS.*
>
> *5.13.3 If a project is likely to have significant transport implications, the applicant's ES (see Section 4.2) should include a transport assessment, using the NATA/WebTAG139 methodology stipulated in Department for Transport guidance, or any successor to such methodology. Applicants should consult the Highways Agency and Highways Authorities as appropriate on the assessment and mitigation.*
>
> *5.13.4 Where appropriate, the applicant should prepare a travel plan including demand management measures to mitigate transport impacts. The applicant should also provide details of proposed measures to improve access by public transport, walking and cycling, to reduce the need for parking associated with the proposal and to mitigate transport impacts."*

15.2.3 Paragraph 5.13.6 states that the Infrastructure Planning Commission (now the Secretary of State (SoS) should ensure that an applicant has sought to mitigate impacts on the surrounding road infrastructure, including during the construction phase of the development. Where the proposed mitigation measures are insufficient

to reduce the impact on the transport infrastructure to acceptable levels, the SoS should consider additional measures to mitigate the adverse impacts on transport networks arising from the development, which could include:

- demand management measures;
- water-borne or rail transport, where cost effective; and
- including relevant requirements within the consent where there is likely to be substantial HGV traffic.

Draft Overarching NPS for Energy (EN-1) (2023)

15.2.4 The UK Government is currently reviewing and updating the energy NPSs. A revised draft NPS EN-1 was published in March 2023 for consultation by the Department for Energy Security & Net Zero (DESNZ) (Department for Energy Security and Net Zero, 2023a). Section 5.14 considers traffic and transport and confirms the need to consider a development's impacts on the surrounding transport infrastructure. It also states that projects likely to have significant transport implications, an applicant's ES should include a transport appraisal and that a Travel Plan should be prepared. Paragraph 5.14.21 states that the SoS should only consider refusing development where there is an unacceptable impact on highway safety, or where the residual cumulative impacts on the road network would be severe, or it does not show how consideration has been given to the provision of adequate active public or shared transport access and provision.

National Policy Statement for Gas Supply and Gas and Oli Pipelines (EN-4) (2011) and Draft EN-4 (2023)

15.2.5 This NPS (Department of Energy and Climate Change, 2011b) (Department for Energy Security and Net Zero, 2023b) should be read in conjunction with EN-1 and provides the primary basis for the decisions made regarding gas and oil infrastructure. There is no specific mention of the Traffic and Transport impact beyond a reference back to EN-1 and an acknowledgment in section 2.20 of increased HGV traffic resulting in a noise and vibration impact.

National Policy Statement for Electricity Networks (EN-5) (2011) and Draft EN-5 (2023)

15.2.6 This NPS (Department for Energy Security and Net Zero, 2023c) should be read in conjunction with EN-1 and sets out how applications for electricity networks are assessed, with no specific reference to Traffic and Transportation.

National Planning Policy Framework (NPPF) (2021)

15.2.7 The National Planning Policy Framework (NPPF) (Ministry of Housing, Communities and Local Government, 2021) was last updated in 2021 and was reconsulted on in late 2022 and early 2023 and sets out the UK Government's national planning policies for England and provides guidance on their application.

15.2.8 The NPPF states that the transport system needs to be balanced in favour of sustainable transport modes, giving people a real choice about how to travel. The policy states that local authorities should support a pattern of development, which,

where reasonable to do so, facilitates the use of sustainable modes of transport. Plans and decisions should ensure that developments that generate significant numbers of vehicle movements are located where the need to travel will be minimised and the use of sustainable transport modes can be maximised.

15.2.9 The NPPF recommends that a Transport Statement (TS) or Transport Assessment (TA) should support all developments that generate significant numbers of vehicle movements, and that development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe.

Planning Practice Guidance (PPG) (2014) Travel Plans, Transport Assessments and Statements

15.2.10 The Planning Practice Guidance (PPG) for Travel Plans, Transport Assessments and Statements was first published in March 2014 on the Government's planning guidance planning portal (Department for Communities and Local Government, 2014), and provides general guidelines for travel plans, transport assessments and statements. This guidance has been taken into account when defining the traffic and transport assessment methodology applied in this PEI Report.

Local Planning Policy

Redcar and Cleveland Local Plan (2018)

15.2.11 The Redcar and Cleveland Local Plan was adopted in 2018 and sets out the vision and overall development strategy for the borough and how it will be achieved for the period until 2032. It includes a number of policies relevant to traffic and transport, as described below.

15.2.12 Policy TA 1 (Transport and New Development) states that:

"The Council and its partners will ensure that the transport requirements of new development, commensurate to the scale and type of development, are taken into account and seek to promote sustainable travel to minimise environmental impacts and support residents' health and wellbeing."

15.2.13 Proposals will be supported that:

- *"improve transport choice and encourage travel to work and school by public transport, cycling and walking;*
- *minimise the distance that people need to travel,*
- *where appropriate contribute positively to wider demand management measures to address congestion, environmental and safety issues".*

15.2.14 Policy TA 2 (Improving Accessibility Within and Beyond the Borough) states that:

"The council will work together with neighbouring authorities, the Tees Valley Combined Authority, Tees Valley Unlimited (the Local Enterprise Partnership), the Government, developers and transport providers to improve accessibility within and beyond the borough, which will support economic, tourism and regeneration objectives for both Redcar and Cleveland and the wider Tees Valley.

This will include working with Highways England to improve capacity to the A66, A1053 and A174, particularly Greystones roundabout."

Tees Valley Combined Authority Strategic Transport Plan 2020 – 2030 (2020)

15.2.15 The Tees Valley Combined Authority Strategic Transport Plan was developed by five constituent local authorities (Darlington Borough Council, Hartlepool Borough Council (HBC), Middlesbrough Council, Redcar and Cleveland Borough Council (RCBC), and Stockton-on-Tees Borough Council (STBC)) and was published in 2020. It's focus is to improve the transport system for local people and businesses, ensuring integration between different transport modes.

15.2.16 The plan has the following aims and aspirations to be delivered over the plan period:

- better transport links helping to create more jobs;
- improving the affordability, quality and reliability of people's daily commute;
- more reliable and affordable public transport, walking and cycling options; and
- improved technology making travelling around as easy and simple as possible.

15.2.17 The Local Implementation Plan 'Transport for the Future' is part of the Tees Valley Strategic Transport Plan which applies until 2030. The Plan seeks to improve connectivity for all as well as promoting sustainable travel and active travel and ensuring that the network can meet the future needs.

15.2.18 There is also a proposal to work with National Highways, Middlesborough Council and the Tees Valley Combined Authority to improve the capacity of the A66 and A174, as these are key transportation links to the wider South Tees industrial area.

15.2.19 There is acknowledgement that Teesport is a major hub for freight transport with over 2,000 movements per day, with much of the transportation investment being led by National Highways, Network Rail and the Tees Valley Combined Authority. It is recognised that studies to improve capacity and resilience are required.

Other Guidance

Guidelines for the Environmental Assessment of Road Traffic (1993)

15.2.20 The Guidelines for the Environmental Assessment of Road Traffic (GEART) (IEA, 1993) were published in 1993 by the Institute of Environmental Assessment (IEA). The guidelines provide a basis for a comprehensive and consistent approach to the appraisal of traffic and transport impacts. Extensive reference has been made to these guidelines throughout the preparation of this chapter.

15.2.21 However, it is acknowledged that the Institute of Environmental Management and Assessment (IEMA) published the Environmental Assessment of Traffic and Movement in July 2023 which provides an update to GEART, and whilst this PEI Report will be undertaken based upon GEART, (due to the timescales for its production), the ES will reflect the new guidance.

15.2.22 However, the two rules to determine the study area remain unchanged and as such it is not envisaged that any significant change in approach will be required within the ES as a result of the new guidance.

Department for Transport Circular 01/2022: The Strategic Road Network and the Delivery of Sustainable Development (2022)

15.2.23 Circular 01/2022 was published in December 2022 by the Department for Transport (DfT) which sets out the way in which National Highways will engage with the development industry to deliver sustainable development and thus economic growth, whilst safeguarding the primary function and purpose of the strategic road network.

15.3 Assessment Methodology and Significance Criteria

Overview

15.3.1 The environmental impact of traffic generated by the Proposed Development has been assessed with reference to GEART (IEA, 1993) and other guidance as detailed in Section 15.2. GEART is recognised as the industry standard methodology for the assessment of traffic and highway impacts. The guidelines outline the issues and the respective changes in volume and composition of traffic regarded as necessary before each issue results in traffic and transport impacts.

15.3.2 As set out in the Scoping Opinion response, the operational phase traffic flows and traffic movements may be scoped out subject to agreement with the Local Highway Authority. This is due to the low volume of associated vehicle movements, and thus only the construction phase has been considered within this preliminary assessment as the worst-case.

15.3.3 In accordance with the GEART guidance, issues including severance, pedestrian amenity, fear and intimidation, highway safety and driver delay associated with the construction phase of the Proposed Development have been investigated and are reported herein.

15.3.4 For the purposes of this chapter no allowance has been made for the delivery of construction materials by water or rail (to assess worst case construction road traffic impacts), but the selected construction contractors will review options for the use of rail and water when sourcing construction materials, and particularly for the movement of any Abnormal Indivisible Loads (AILs).

15.3.5 In addition, at this preliminary stage, the assessment only includes a preliminary cumulative assessment of the Net Zero Teesside (NZT) development (due to information availability and timing), and the ES will include other development as relevant to traffic and transport.

15.3.6 Environmental effects relating to air pollution and noise and vibration, as generated by traffic associated with the Proposed Development, are considered in Chapter 8: Air Quality (PEI Report, Volume I) and Chapter 11: Noise and Vibration (PEI Report, Volume I), respectively.

15.3.7 Chapter 5: Construction Programme and Management (PEI Report, Volume I) provides details on the proposed construction programme for the Proposed Development.

15.3.8 The construction phase has been assessed within the chapter, assuming a worst case that construction commences in Q1 2025, with a peak of construction in month 17 (May 2026).

Study Area

15.3.9 The Main Site is accessed from the A1085 Trunk Road, a dual carriageway road running north-east to south-west between Redcar and the A1053 Tees Dock Road. The road is subject to the national speed limit. Travelling south-west from the Main Site access, the A1085 Trunk Road provides a link to the A1053 Tees Dock Road, which in turn connects to the A174 to the south and the A66 to the north. The A1053 Tees Dock Road and A174 are part of National Highways core network.

15.3.10 Access routes to the Hydrogen Pipeline Corridor north of the River Tees are assumed to be via the A1046 Haverton Hill Rd/Port Clarence Road and the B1275, with the potential for compound access points off the A178 Seaton Carew Road, A1185, Nelson Avenue, Cowpen Bewley Road and the unnamed road to Seal Sands (commonly known as Seal Sands Road).

15.3.11 The Study Area for this assessment is shown on Figure 15-1: Traffic Study Area (PEI Report, Volume II). It has been defined with reference to the GEART (IEA, 1993) which set out two rules as follows:

- Rule 1 – include highway links where traffic flows are predicted to increase by more than 30% (or where the number of HGVs is predicted to increase by more than 30%); and
- Rule 2 – include any other specifically sensitive areas where the traffic flow (or HGV component) are predicted to increase by more than 10%.

15.3.12 To define the Study Area, a network of road links has been identified and then tested against Rules 1 and 2. The road links that have been considered in determining if the above rules are satisfied, and which form the Study Area, are listed below and shown in Figure 15-3: Traffic Count Locations (PEI Report, Volume II):

- A1085 Trunk Road (north of the Main Site roundabout);
- A1085 Trunk Road (south of the Main Site roundabout);
- A1042 Kirkleatham Lane;
- A1085 Trunk Road (south of the British Steel Lackenby entrance);
- A1085 Broadway;
- A66 (west of A1053);
- A1053 Greystone Road;
- B1380 High Street;

- A174 (west of Greystones roundabout);
- A1046 Port Clarence Road;
- A178 Seaton Carew Road;
- Unnamed road serving Seal Sands;
- B1275 Belasis Avenue; and
- A1185.

Impact Assessment Methodology

Sensitivity of Receptors

15.3.13 The sensitivity of a road, or the immediate area through which it passes, can be 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.

15.3.14 A desktop exercise has been undertaken to classify the sensitivity of the routes within the Study Area. The classification of the link sensitivity is based on professional judgement. For example, if the route passes a school, care home or similar, it will have a higher sensitivity due to the presence of vulnerable users. Similarly, if the route passes through the middle of a town or village, it will have a higher sensitivity than if there was limited frontage development in the Study Area. Table 15-1 identifies the links, then assigns a sensitivity rating of either Very Low, Low, Medium, or High, together with the rationale. This sensitivity rating, along with the magnitude, is then used to determine the significance of effect within Table 15-3.

Table 15-1: Sensitivity of Transportation Link Receptors

LINK	DESCRIPTION	LINK SENSITIVITY	RATIONALE
1	A1085 Trunk Road, located approximately 100 m east of Ennis Road	Low	The road is a dual carriageway and is subject to a de-restricted speed limit reducing to 40 miles per hour (mph) prior to the junction with Ennis Road. There is no frontage development along the route until reaching the junction with the A1042. A shared footway/cycleway is provided either side of the carriageway which is street lit.
2	A1085 Trunk Road, located approximately 1.3 km south of West Coatham Lane	Low	The road is a dual carriageway and is subject to a de-restricted speed limit. There is no frontage development along the route. A shared footway /cycleway is provided either side of the carriageway which is street lit.
3	A1042 Kirkleatham Lane, located approximately 85 m south of Staintondale Avenue	High	The two-lane single carriageway is subject to a 30 mph speed limit with residential properties on either side and is street lit. Pedestrian footways are provided either side of the carriageway separated by a grass verge. On-road cycle lanes are provided either side of the carriageway. The road passes Outwood Academy Redcar approximately 800 m to the south of the A1085 Trunk Road.
4	A1085 Trunk Road, located approximately 0.5 km north of A1053 Tees Dock Road	Low	The road is a dual carriageway and is subject to a de-restricted speed limit. There is no frontage development along the route. A shared footway/ cycleway is provided either side of the carriageway which is street lit.
5	A1085 Broadway, located approximately 230 m east of Birchington Avenue	Medium	The two-lane single carriageway is subject to a 30-mph speed limit with residential properties on either side and is street lit. On-road cycle lanes are provided either side of the carriageway. Pedestrian footways are provided either side of the carriageway separated by the cycle lane and on-street parking bays.
6	A1380 High Street, located approximately 50 m east of Lackenby Lane	Medium	The two-lane single carriageway is subject to a 30-mph speed limit with a pedestrian footway provided on the northern side of the carriageway. The route passes a cluster of residential properties on the north side of the carriageway.
7	A66, located approximately 140 m east of Whitworth Road	Low	The road is a dual carriageway and is subject to a 50-mph speed limit. Any frontage development is industrial in nature.

LINK	DESCRIPTION	LINK SENSITIVITY	RATIONALE
8	A1046 Port Clarence Road, located approximately 20 m north of Beech Terrace	High	The two-lane single carriageway is subject to a 30 mph speed limit and is street lit. A shared footway/cycleway is provided either side of the carriageway. Residential properties are located on the north side of the carriageway but are located a good distance back from the highway. High Clarence Primary School is located on this road.
9	A178 Seaton Carew Road, located approximately 530 m north of Huntsman Drive	Low	The two-lane single carriageway is subject to a de-restricted speed limit. No footways are provided along the route. There is no frontage development along the route which passes through open country.
10	Unnamed Road, located approximately 720 m east of A178 Seaton Carew Road	Low	The two-lane single carriageway is subject to a 40-mph speed limit and is street lit. No footways are provided either side of the carriageway. The road provides access to a number of petro-chemical facilities; therefore, any frontage is industrial in nature.
11	A1053 Greystone Road, located approximately 600 m north of the A174/A1053 Greystones roundabout	Low	The road is a dual carriageway and is subject to a de-restricted speed limit. There is no frontage development along the route. There are no pedestrian or cycle facilities along the route.
12	A174 (West of Greystone Roundabout), located approximately 1 km west of the A174/A1053 Greystones roundabout	Low	The road is a dual carriageway and is subject to a de-restricted speed limit. There is no frontage development along the route. There are no pedestrian or cycle facilities along the route.
13	B1275 Belasis Avenue, located approximately 1.6 km west of its junction with Cowpen Bewley Road	Low	The two-lane single carriageway is subject to a de-restricted speed limit and is street lit. A footway is provided along the northern side of the carriageway. There is no frontage development along the route which passes through open country.

LINK	DESCRIPTION	LINK SENSITIVITY	RATIONALE
14	A1185, located approximately 800 m west of A178 Seaton Carew Road	Low	The two-lane single carriageway is subject to a de-restricted speed limit. No footways are provided along the route. There is no frontage development along the route which passes through open country.

Potential Environmental Factors

15.3.15 The following environmental factors are susceptible to changes as a result of traffic.

Severance

15.3.16 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 GEART (IEA, 1993) suggest that changes in total traffic flow of 30%, 60% and 90% result in slight, moderate and substantial changes in severance respectively, and whilst the numerical thresholds have been adopted within Table 15-2, the terminology used to describe magnitude have been slightly amended to reflect our assessment criteria.

Pedestrian Amenity

15.3.17 Pedestrian 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 GEART (IEA, 1993) suggest that a doubling or halving of total traffic flow or the HGV composition could lead to perceptible negative or positive impacts upon pedestrian amenity.

Fear and Intimidation

15.3.18 The volume of traffic and its HGV composition are the factors that contribute to fear and intimidation. In the absence of thresholds set out in the GEART (IEA, 1993), this assessment considers that changes in total traffic flow of 30%, 60% and 90% are considered to result in slight, moderate or substantial impacts, and whilst the numerical thresholds have been adopted within Table 15-2, the ratings of magnitude have been slightly amended to reflect our assessment criteria.

Highway Safety

15.3.19 Highway safety is assessed by the frequency and severity of injury accidents that are attended by the police and recorded in official accident statistics. Intensification of use or changes in the composition of traffic has the potential to have an impact on collision rates. The examination of recent collision statistics on routes within the Study Area will highlight any hotspots that need further examination.

Hazardous Loads

15.3.20 Hazardous loads are assessed based on the estimated number and composition of such loads. Where the number of movements is considered to be significant, a risk analysis will be undertaken as part of the EIA and reported in the ES to illustrate the potential for an accident to happen and the likely impact of such an event.

Driver Delay

15.3.21 The use of industry standard junction capacity modelling programs 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. This is not

considered to be required at this stage but will be confirmed following the outcome of further assessment in the ES.

Significance Criteria

15.3.22 Using the information as set out above, the magnitude of traffic impacts is defined in Table 15-2.

Table 15-2: Traffic and Transport Assessment Framework – Magnitude of Impacts

TYPE OF IMPACT	MAGNITUDE OF IMPACT			
	VERY LOW	LOW	MEDIUM	HIGH
Severance	Change in total traffic flow of < 30%	Change in total traffic flow of 30% - 60%	Change in total traffic flow of 61% - 90%	Change in total traffic flow of >90%
Pedestrian amenity	Changes in traffic flow (or HGV component) less than 50%	Changes in traffic flow (or HGV component) of 50% to 100%	Changes in traffic flow (or HGV component) of 101% to 150%	Change in traffic flow (or HGV component) of >150%
Fear and intimidation	Change in total traffic flow of < 30%	Change in total traffic flow of 30% - 60%	Change in total traffic flow of 61% - 90%	Change in total traffic flow of >90%
Highway safety	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			
Driver delay	Magnitude of impact derived using professional judgment informed by the increase in vehicle delay and whether a junction is at, or close to capacity			

15.3.23 By combining the receptor sensitivity with the magnitude of impact using the assessment matrix shown in Table 15-3, traffic effects can be classified as Negligible, Minor, Moderate or Major (Adverse or Beneficial).

Table 15-3: Classification of Effects

MAGNITUDE OF IMPACT	SENSITIVITY/IMPORTANCE OF RECEPTOR			
	HIGH	MEDIUM	LOW	VERY LOW
High	Major	Major	Moderate	Minor
Medium	Major	Moderate	Minor	Negligible

MAGNITUDE OF IMPACT	SENSITIVITY/IMPORTANCE OF RECEPTOR			
	HIGH	MEDIUM	LOW	VERY LOW
Low	Moderate	Minor	Negligible	Negligible
Very Low	Minor	Negligible	Negligible	Negligible

15.3.24 As outlined in Chapter 2: Assessment Methodology (PEI Report, Volume I), Major and Moderate (Adverse or Beneficial) effects are considered Significant, whilst those that are Minor (Adverse or Beneficial) or Negligible are considered Not Significant.

Sources of Information/Data

15.3.25 A series of 7-day automatic traffic counts (ATCs) were undertaken between 19th November 2019 and 25th November 2019 for the NZT at the following locations to provide a baseline on the road links in the Study Area:

- A1085 Trunk Road (north of the Main Site roundabout);
- A1085 Trunk Road (south of the Main Site roundabout);
- A1042 Kirkleatham Lane;
- A1085 Trunk Road (South of British Steel Lackenby Entrance);
- A1085 Broadway;
- A66 (west of A1053);
- A1053 Greystone Road;
- B1380 High Street;
- A174 (west of Greystone roundabout);
- A1046 Port Clarence Road;
- A178 Seaton Carew Road;
- Unnamed road serving Seal Sands;
- B1275 Belasis Avenue; and
- A1185 (west of A178 Seaton Carew Road).

15.3.26 Traffic flows for the A1053 Greystone Road and A174 were obtained from Highways England's[1] Webtris database for the month of September 2019 (Highways England, 2019). Traffic flows for the A1185 and B1275 were obtained from the DfT Road Traffic Statistics website for 2019 (DfT, 2019).

15.3.27 In addition to the ATC counts, traffic counts were undertaken for the NZT project on Tuesday 19th November 2019 between the hours of 06:00 – 10:00 and 16:00 – 20:00 at the following junctions on the local highway network for the overall network morning (AM) and evening (PM) peak hours:

[1] Now National Highways.

- MCC 1: A1085/West Coatham Lane/Main Site access roundabout;
- MCC 2: A1085/A1053 roundabout; and
- MCC 3: A1053/A174/B1380 roundabout.

15.3.28 Whilst the above traffic data is considered suitable to reuse for the purposes of this preliminary transportation assessment for the Proposed Development, new counts will be collected during the EIA to ensure that the assessment is based on the most recent data.

Consultation

15.3.29 An EIA Scoping Opinion was requested from the Planning Inspectorate ('the Inspectorate') in April 2023, which was received on 17th May 2023. A high-level summary of responses to the Scoping Opinion comments relevant to this discipline are outlined in Table 15-4.

Table 15-4: Responses to Scoping Comments

CONSULTEE	DATE AND METHOD OF CONSULTATION	SUMMARY OF CONSULTEE COMMENTS	SUMMARY OF RESPONSE/ HOW COMMENTS HAVE BEEN ADDRESSED
The Inspectorate	Scoping Opinion 17th May 2023	Impacts from operational traffic. The Scoping Report seeks to scope out operational road traffic flows from detailed assessment, stating that the anticipated maximum workforce of 85 staff on site within a 24-hour period is unlikely to give rise to significant effects. This approach is to be agreed with the Local Highway Authority. Having considered the nature and characteristics of the Proposed Development, the Inspectorate agrees that subject to confirmation of the number and type of all operational vehicle movements (i.e. HGVs in addition to staff) in the ES description of development, operational traffic movements are not likely to result in significant effects and that an assessment of this matter can be scoped out of the ES. Agreement should be sought from the relevant Highways Authority.	Noted. Only construction impacts have been assessed within this PEI Report, with the operational and decommissioning phases not considered to result in a severe impact upon the highway network. This assumption will be reviewed during the EIA process.
The Inspectorate	Scoping Opinion 17th May 2023	Future baseline. The ES should clearly explain how the future baseline has been calculated and how this has considered other planned development in the area using the same road network during the construction period.	The future baseline is detailed in Section 15.4 and will be further explained in the ES.
The Inspectorate	Scoping Opinion 17th May 2023	Abnormal indivisible loads (AIL). The Scoping Report states that local ports are being considered for transport of AIL and that consideration will be given to the appropriate port and AIL routes during the design process. The ES should include an assessment of the likely significant effects arising from transportation of AIL via each proposed transportation	Noted – details as applicable will be included in the ES. Although at this stage it is envisaged that most deliveries would be made via the Teesworks Steel House Gate. In cases where abnormal loads are required that cannot pass under the existing

CONSULTEE	DATE AND METHOD OF CONSULTATION	SUMMARY OF CONSULTEE COMMENTS	SUMMARY OF RESPONSE/ HOW COMMENTS HAVE BEEN ADDRESSED
		method and identify any mitigation measures required and how these would be secured.	bridge at the Teesworks Steel House Gate entrance the alternative would be to use the unnamed private track. However, as mentioned this will be reviewed as part of the ES.
The Inspectorate	Scoping Opinion 17th May 2023	Hazardous loads. The ES should include an assessment of likely significant effects arising from the transportation of hazardous loads during construction and operation of the Proposed Development, and identify any mitigation required (including drainage systems) and how this would be secured through the DCO.	Noted – details as applicable will be included in the ES.
National Highways	Scoping Opinion 17th May 2023	Further information required in relation to the following: • Peak construction flows; • The average car occupancy of 2.33; • Vehicle routings; • The impact upon the Strategic Route Network (SRN); • Measures to be included within the Construction Traffic Management Plan (CTMP).	Further detail is included within this PEI Report at Section 16.6, which sets out the peak construction traffic flows, the car occupancy assumed, vehicle routings and the impact upon the SRN. Section 16.5 sets out the Proposed Development Design and Impact Avoidance which states that as part of the ES a CTMP and CWTP will be submitted.

Use of the Rochdale Envelope

15.3.30 To ensure a robust assessment of the likely significance of the environmental effects of the Proposed Development, the EIA is being undertaken adopting the principles of the 'Rochdale Envelope' approach where appropriate in line with The Inspectorate's guidance (The Inspectorate, 2018). This involves assessing the maximum (or where relevant, minimum)/worst case parameters for the elements where flexibility needs to be retained (building dimensions or operational modes for example).

15.3.31 Details regarding the maximum and minimum parameters adopted for building sizes within the Rochdale Envelope defined for the Proposed Development do not have any material impact on vehicle numbers accessing the Main Site and Connection Corridors. Similarly, where flexibility is to be retained in the application, this is unlikely to have a material difference on the volumes of traffic accessing the Proposed Development Site during the construction phase. However, the assessment will consider worst case traffic flows as associated with the peak of construction.

15.4 Baseline Conditions

Existing Baseline

Local Highway Network

15.4.1 As presented on Figure 15-2: HGV Routes to and from the Main Site (PEI Report, Volume II), the Main Site is located approximately 2 km north-west of Redcar and will be accessed via the existing roundabout junction with the A1085 and West Coatham Lane. The wider Connection Corridors cover land to the north and south of the River Tees as shown on Figures 4-1 to 4-8 (PEI Report, Volume II).

15.4.2 The A1085 Trunk Road is a dual carriageway road running east to west between Redcar and the A1053 Tees Dock Road and is subject to a de-restricted speed limit. The carriageway is street lit and a shared footway/cycleway is provided on either side of the road.

15.4.3 Travelling west from the site access, the A1085 provides a link to the A1053 which in turn connects to the A174 to the south and the A66 to the north. The A1053 and A174 are part of National Highways strategic network. All other routes are managed by RCBC.

Walking

15.4.4 The Chartered Institution of Highways and Transportation (CIHT) document 'Providing for Journeys on Foot' (2000) suggests a maximum walking distance of 2 km for journeys to work.

15.4.5 Considering a 2 km walking catchment area, the potential for walking access to the Main Site is small with only the built-up area of Dormanstown on the western edge of Redcar located within a 2 km walking distance of the Main Site.

15.4.6 In terms of pedestrian facilities, a footway is provided on both sides of West Coatham Lane and Broadway West which is street lit. In addition, a shared footway/cycleway

is provided along the entire length of the A1085 Trunk Road on either side of the carriageway.

15.4.7 At the A1085/West Coatham Lane Roundabout, dropped kerbs and tactile paving are provided on all arms of the junction. Central refuges are also provided on the A1085 to allow pedestrians to cross the dual carriageway.

15.4.8 Given the limited walking catchment area, it is not therefore anticipated that walking trips will likely represent a practical mode for construction, operational and/or decommissioning staff.

Cycling

15.4.9 Cycling is a viable alternative to private car for journeys up to 8 km, providing a healthy and environmentally friendly form of transport.

15.4.10 In respect of acceptable cycle distances, it is widely accepted that many utility cycle trips are less than 3 miles (approximately 5 km), but for commuter journeys 5 miles (approximately 8 km) is not uncommon. An 8 km catchment area includes Redcar, Marske-by-the-Sea and the suburbs of Eston, Normanby and South Bank to the east of Middlesbrough.

15.4.11 Within the vicinity of the Main Site there is a shared cycle/footway along the length of the A1085 Trunk Road between Redcar and Middlesbrough. Given the cycling infrastructure already in place on the local road network, there is potential for staff living within this catchment area to travel to the Proposed Development Site by bicycle.

Public Transport

15.4.12 The nearest bus stops to the Main Site are located on West Coatham Lane approximately 250 m south-east of the Main Site entrance. Pedestrian crossing facilities in the form of drop kerbs and tactile paving are provided on all five arms of the A1085/West Coatham Lane/Site Access Roundabout allowing for safe crossing of this junction.

15.4.13 There are five services that stop at the West Coatham Lane bus stops, namely services 62, X3, X3A, X4 and X4A. All bus services are run by Arriva Bus.

15.4.14 Bus Service 62 runs between Middlesbrough and New Marske via Dormanstown and Redcar. Service 62 operates a half hourly service Monday to Saturday apart from Sunday which operates an hourly service. The first bus departs Middlesbrough at 06:43 and New Marske at 06:25. The last bus departs Middlesbrough at 20:05 and New Marske at 19:45.

15.4.15 Bus Service X3 runs between Middlesbrough and Lingdale via Dormanstown, Redcar and Saltburn. Service X3 operates an hourly service Monday to Saturday. The first bus departs Middlesbrough at 08:25 and Lingdale at 06:44. The last bus departs Middlesbrough at 17:25 and Lingdale at 17:54.

15.4.16 Bus Service X3A runs between Middlesbrough and Brotton. Service X3A operates an hourly service Monday to Saturday. The first bus departs Middlesbrough at 08:50 and Brotton at 09:15. The last bus departs Middlesbrough at 17:55 and Brotton at 17:15.

15.4.17 Bus Service X4 runs between Middlesbrough and Whitby via Redcar and Saltburn. Service X4 operates a half hourly service Monday to Saturday apart from Sunday which operates an hourly service. The first bus departs Middlesbrough at 06:02 and Whitby at 05:59. The last bus departs Middlesbrough at 18:10 and Whitby at 17:04.

15.4.18 Bus Service X4A runs between Middlesborough and Whitby via Redcar and Saltburn. Service X4A operates an hourly evening service Monday to Sunday.

15.4.19 Given the frequency of bus services, it is anticipated that using the bus could be an attractive option for workers accessing the Main Site.

15.4.20 The nearest railway station to the Proposed Development Site is British Steel, Redcar, which is located within the Proposed Development Site. The station is located on the Tees Valley Line and is operated by Northern Rail. Historically, there were two eastbound services per day to Saltburn via Redcar and two westbound services per day to Bishop Auckland via Middlesbrough and Darlington. Northern Rail suspended all services to and from the station on 14th December 2019 due to the lack of passengers using the station. However, there is potential for the station to be re-opened in the future for both construction staff and operational staff to use the train as a mode of traveling to work. The nearest station to the Main Site that is still open is Redcar Central, located approximately 3 km to the east.

Existing Traffic Flows

15.4.21 The following highway links form the highway network of interest for this assessment, as agreed for NZT. Whilst this is still considered to be applicable for the Proposed Development, it will be reviewed following the completion of the PEI Report and updated if required within the ES.

- A1085 Trunk Road (north of The Main Site roundabout);
- A1085 Trunk Road (south of The Main Site roundabout);
- A1042 Kirkleatham Lane;
- A1085 Trunk Road (South of British Steel Lackenby Entrance);
- A1085 Broadway;
- A66 (west of A1053);
- A1053 Greystone Road;
- B1380 High Street;
- A174 (west of Greystone roundabout);
- A1046 Port Clarence Road;
- A178 Seaton Carew Road;
- Unnamed road serving Seal Sands;
- B1275 Belasis Avenue; and
- A1185 (west of A178 Seaton Carew Road).

15.4.22 Baseline 24-hour Annual Average Daily Traffic (AADT) two-way link flows are provided in Table 15-5.

Table 15-5: 2019 Baseline Annual Average Daily Traffic (AADT) Flows

LINK		TOTAL VEHICLES	TOTAL HGVS	HGV PERCENTAGE (%)
1	A1085 Trunk Road, 100 m east of Ennis Road	12,274	1,049	8.5
2	A1085 Trunk Road, 1,340 m south of West Coatham Lane	14,387	1,275	8.9
3	A1042 Kirkleatham Lane, 85 m south of Staintondale Avenue	11,791	762	6.5
4	A1085 Trunk Road, 500 m north of A1053 Tees Dock Road	16,058	2,012	12.5
5	A1085 Broadway, 235 m east of Birchington Avenue	8,093	521	6.4
6	A1380 High Street, 50 m east of Lackenby Lane	9,835	826	8.4
7	A66, 140 m east of Whitworth Road	19,865	3,662	18.4
8	A1046 Port Clarence Road, 20 m north of Beech Terrace	7,612	896	11.8
9	A178 Seaton Carew Road, 530 m north of Huntsman Drive	7,814	998	12.8
10	Unnamed Road, 720 m east of A178 Seaton Carew Road	4,206	860	20.4
11	A1053 Greystone Road, 600 m north of the A174/A1053 Greystones roundabout	14,387	1,392	9.7

LINK		TOTAL VEHICLES	TOTAL HGVS	HGV PERCENTAGE (%)
12	A174 (West of Greystone Roundabout), 1 km west of the A174/ A1053 Greystones roundabout.	31,758	1,936	6.1
13	B1275 Belasis Avenue, 1.6 km west of its junction with Cowpen Bewley Road	2,451	72	2.9
14	A1185, 800 m west of A178 Seaton Carew Road	5,651	1,026	18.2

Personal Injury Accidents

15.4.23 Accident data has been taken into consideration in line with the Travel Plans, Transport Assessments and Statements Planning Practice Guidance (2014), which advises an analysis of any road traffic incidents that have occurred within the most recent five-year period within the locality of the proposed development site.

15.4.24 Personal Injury Accident (PIA) data has been obtained from the Crashmap.co.uk (CrashMap, 2023) and accounts for accidents that have occurred within the selected areas between 1st January 2017 and 31st December 2021 (the most up to date data available at the time of preparing this report).

15.4.25 A full analysis of the most recent PIA data will be included in the Transport Assessment reported in the ES, therefore only a summary of the data is included within this PEI Report chapter.

Personal Injury Accidents- South of the Tees

15.4.26 Within the defined area to the south of the River Tees, a total of 50 accidents occurred over the five-year study period (2017-2021). Of these accidents, 41 were classed as slight in severity, eight were classed as serious, and one was classed as fatal. A breakdown of all accidents within this time period, within the Study Area south of the River Tees, is provided in Table 15-6.

Table 15-6: Accident Data Summary – South of the River Tees

YEAR	ACCIDENT SEVERITY			
	SLIGHT	SERIOUS	FATAL	TOTAL
2017	5	1	0	6
2018	10	3	0	13

YEAR	ACCIDENT SEVERITY			
	SLIGHT	SERIOUS	FATAL	TOTAL
2019	7	0	0	7
2020	6	3	1	10
2021	13	1	0	14
TOTAL	41	8	1	50

North of the Tees

15.4.27 Within the defined area outlined to the north of the River Tees, a total of 12 accidents occurred over the five-year study period (2017-2021). Of these accidents, 11 were classed as slight, three were classed as serious, and none were classed as fatal. A breakdown of all accidents within this time period, within the Study Area north of the River Tees, is provided in Table 15-7.

Table 15-7: Accident Data Summary – North of the River Tees

YEAR	ACCIDENT SEVERITY			
	SLIGHT	SERIOUS	FATAL	TOTAL
2017	1	1	0	2
2018	2	0	0	2
2019	5	1	0	6
2020	0	1	0	1
2021	1	0	0	1
TOTAL	9	3	0	12

15.4.28 From the above, there is not considered to be any existing underlying road safety problem that will impact upon the Proposed Development.

Future Baseline

15.4.29 It is currently anticipated that (subject to the necessary consents being granted and an investment decision being made), early enabling works for both phases 1 and 2 will begin in Q2 2025, the construction of Phase 1 will begin in Q3 2025 and be complete in Q1 2028, and the construction of Phase 2 will start in Q2 2028 and be complete in Q4 2030.

15.4.30 The actual peak of construction will occur during Phase 1 in month 17 (May 2026) based on the construction workforce and HGV profile (see Section 15.6). This has therefore been used as the worst-case. During the peak of construction, both construction of the Main Site and the associated pipeline network and utility connections will take place concurrently. The peak of construction programme will be reviewed and confirmed in the ES.

TEMPRO Factors

15.4.31 The future baseline year flows have been derived by applying the national standard programme Trip End Model Presentation Program (TEMPRO) growth factors (TEMPRO 7.2b) to the above flows and are indicated in Table 15-8. These growth factors have been taken into account when comparing the baseline and future traffic scenarios.

Table 15-8: TEMPRO Traffic Growth Factors

YEAR	GROWTH FACTOR FROM TEMPRO
2019 to 2026 Daily	1.054
2019 to 2026 AM Peak	1.055
2019 to 2026 PM Peak	1.055

15.4.32 The above has been used to predict the future baseline traffic at the year of peak construction and which will also make an applicable allowance for future developments within the local area.

Future Baseline Traffic

15.4.33 Future year baseline traffic flows for the assessment year of peak of construction are presented in Table 15-9.

Table 15-9: 2026 Baseline Traffic Flows AADT

LINK		TOTAL VEHICLES	TOTAL HGVS	HGV PERCENTAGE
1	A1085 Trunk Road, 100 m east of Ennis Road	12,948	1,107	8.5%
2	A1085 Trunk Road, 1.3 km south of West Coatham Lane	15,176	1,345	8.9%
3	A1042 Kirkleatham Lane, 85 m south of Staintondale Avenue	12,438	804	6.5%
4	A1085 Trunk Road, 0.5 km north of A1053 Tees Dock Road	16,940	2,122	12.5%
5	A1085 Broadway, 230 m east of Birchington Avenue	8,537	549	6.4%
6	A1380 High Street, 50 m east of Lackenby Lane	10,375	871	8.4%

LINK		TOTAL VEHICLES	TOTAL HGVS	HGV PERCENTAGE
7	A66, 140 m east of Whitworth Road	20,955	3,863	18.4%
8	A1046 Port Clarence Road, 20 m north of Beech Terrace	8,030	945	11.8%
9	A178 Seaton Carew Road, 530 m north of Huntsman Drive	8,243	1,053	12.8%
10	Unnamed Road, 720 m east of A178 Seaton Carew Road	4,437	907	20.4%
11	A1053 Greystone Road, 600 m north of the A174/A1053 Greystones roundabout	15,177	1,468	9.7%
12	A174 (West of Greystone Roundabout), 1 km west of the A174/A1053 Greystones roundabout.	33,502	2,042	6.1%
13	B1275 Belasis Avenue, 1.6 km west of its junction with Cowpen Bewley Road	2,586	76	2.9%
14	A1185, 800 m west of A178 Seaton Carew Road	5,961	1,082	18.2%

15.4.34 The above shows that the highest baseline HGV percentage is on the A66, and on the unnamed road to the north side of the River Tees.

Committed Development

15.4.35 At this preliminary stage, only the Net Zero Teesside (NZT) development has been included, and the ES will include other development as relevant to traffic and transport.

15.5 Proposed Development Design and Impact Avoidance

Construction

15.5.1 The construction contractor will implement a range of good practice mitigation measures during the construction phase to minimise traffic impacts upon local highways – this includes:

- implementation of a Construction Worker Travel Plan (CWTP) which will include measures and procedures to encourage construction workers to adopt modes of transport which reduces reliance on single occupancy private car use (a framework CWTP will be prepared and included with the ES);
- the appointed construction contractors to assess the potential for implementation of construction worker minibuses and car sharing options (to be considered as part of the CWTP);
- implementation of a Construction Traffic Management Plan (CTMP) to control the impact of HGVs on the local road network during construction (a Framework CTMP will be prepared and included with the ES); and
- working with suppliers to ensure that all relevant materials (including chemicals) brought to the Proposed Development Site that are classified as hazardous are transported in compliance with applicable regulations including the Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (CDG Regs) (as amended), during the commissioning and (operational)phase. This will include, for example, consignments being marked with the familiar "Emergency Access Codes" and including a telephone number for advice in the event of an emergency.

Operation

15.5.2 Workforce numbers during operation will be a maximum of 130 people (staff) following the opening of both Phases 1 and 2 (with a maximum of 100 staff being employed as part of Phase 1 only). Operations staffing will be on a shift basis to be spread over a 24-hour period. However, during 28-day maintenance periods which are likely to occur approximately every four years, there would be up to 400 people on site. Due to the very low traffic flows this would generate, no impact avoidance measures are considered required or proposed. A Travel Plan for the operational facility will be prepared and agreed prior to any occupation.

Decommissioning

15.5.3 Decommissioning is expected to require some traffic movements associated with the removal (and recycling as appropriate) of material arising from demolition and potentially the import of materials for land restoration and re-instatement. To minimise the impacts of decommissioning upon local highways, a Decommissioning Traffic Management Plan (DTMP) would be prepared to control the impacts of decommissioning worker traffic and HGVs.

15.5.4 Due to this activity being several years in the future, the baseline conditions cannot be estimated with any accuracy and as such no further assessment is possible, although any impact is likely to similar to the construction phase.

15.6 Likely Impacts and Effects

Construction

Introduction

15.6.1 Indicative construction compound locations are shown in Plate 15-1.

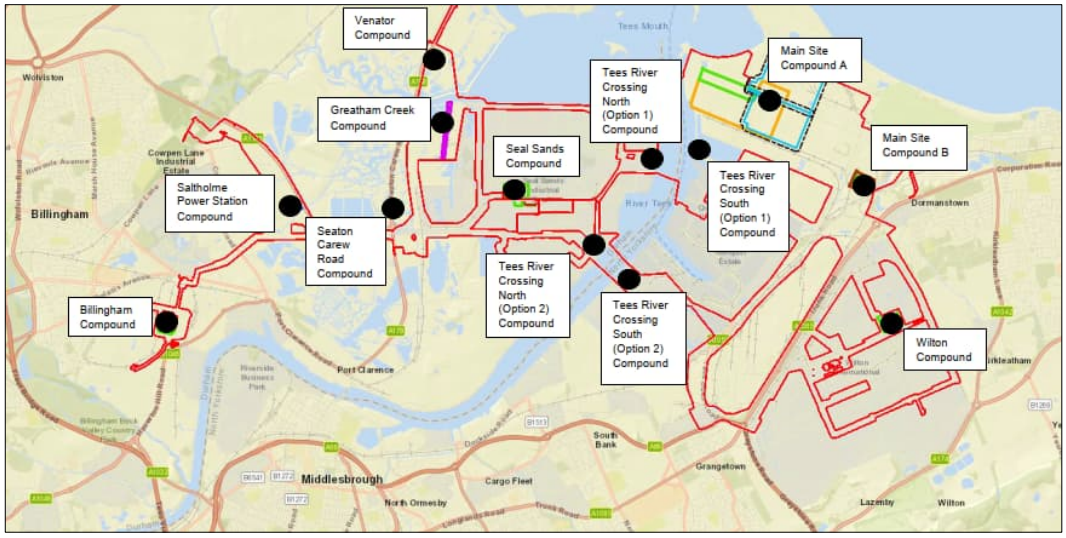

Plate 15-1: Construction Compound Locations

15.6.2 The proposed accesses to each of the above compounds are set out as follows:

South of the River Tees

- Access to the Main Site Compounds A and B and River Tees Crossing South Compound (Option 1) would be via the A1085 Trunk Road and the Teesworks Steel House Gate.
- Access to the River Tees Crossing South Compound (Option 2) would be via A1085 Trunk Road, Teesworks Steel House Gate, unnamed roads and Tees Dock Road or A1085 Trunk Road and Tees Dock Road.
- Access to the Wilton Compound would be via the Trunk Road and Wilton International East Gate or via the A174 and Wilton International South East Gate or Wilton Centre.

North of the River Tees

- Access to Tees River Crossing North Compound (Option 1), Seal Sands Compound and Greatham Creek Crossing Compound would be via A178 Seaton Carew Road and Seal Sands Road.
- Access to the Tees River Crossing North Compound (Option 2) would be via A178 Seaton Carew Road, Huntsman Drive and Riverside Road.
- Access to the Seaton Carew Road Compound and Venator Compound would be via A178 Seaton Carew Road/Tees Road.

- Access to the Saltholme Power Station Compound would be via A178 Seaton Carew Road, Seal Sands Roundabout and A1185.
- Access to the CF Fertilisers Billingham Compound would be via A178 Seaton Carew Road, A1046 Port Clarence Road and Haverton Hill Road or A19 Fleetbridge Road, Portrack Interchange and Haverton Hill Road.

15.6.3 It has been assumed that all construction compounds to the south of the River Tees will be accessed via the A1085 Trunk Road / Teesworks Steel House Gate roundabout. With all construction traffic to the north of the River Tees using the A178 Seaton Carew Road or A1185 to access the unnamed road to the east of the Seal Sands roundabout.

15.6.4 A potential alternative to the above is for HGVs to the south of the River Tees to access the Main Site and Connection Corridor construction compounds via the A1085 Lackenby Steek Works entrance. However, for the purposes of this PEI Report, the access is assumed to be via the Teesworks Steel House Gate, as set out above, and this assumption will be reviewed following this PEI Report as the EIA progresses, and stated in the ES.

15.6.5 The preliminary assessment below includes all elements of the Proposed Development Site, including the Main Site and the Connection Corridors north and south of the River Tees. Plate 15-2 shows the indicative profile of the traffic and worker and HGV trips.

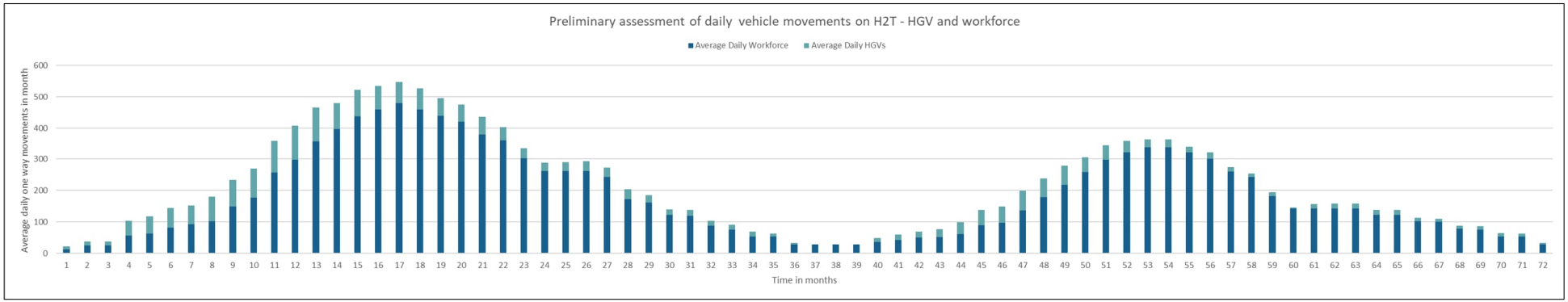

Plate 15-2: Construction Vehicle Profile (Average Daily Workforce and Average Daily HGVs)

Construction Workers

15.6.6 The estimated profile of the construction workers during construction of the Proposed Development is shown in Table 15-10, with the peak month being highlighted for reference.

15.6.7 It should be noted that the following information is used as the basis for distributing workers between the Main Site and the Connection Corridors to the north and south of the River Tees.

Table 15-10: Construction Monthly Worker Profile

MONTH OF CONSTRUCTION	NUMBER OF CONSTRUCTION WORKERS ON THE MAIN SITE	NUMBER OF CONNECTION CORRIDOR CONSTRUCTION WORKERS	TOTAL NUMBER OF CONSTRUCTION WORKERS – MAIN SITE AND CONNECTION CORRIDORS
1	20	0	20
2	50	0	50
3	50	0	50
4	70	20	90
5	80	20	100
6	100	30	130
7	100	40	140
8	120	40	160
9	180	60	240
10	200	80	280
11	300	120	420
12	400	120	520
13	500	140	640
14	600	140	740
15	700	140	840
16	750	140	890
17	800	140	940
18	800	120	920
19	750	120	870
20	700	120	820
21	600	120	720
22	550	120	670
23	400	120	520

MONTH OF CONSTRUCTION	NUMBER OF CONSTRUCTION WORKERS ON THE MAIN SITE	NUMBER OF CONNECTION CORRIDOR CONSTRUCTION WORKERS	TOTAL NUMBER OF CONSTRUCTION WORKERS – MAIN SITE AND CONNECTION CORRIDORS
24	300	120	420
25	300	120	420
26	300	120	420
27	300	100	400
28	250	50	300
29	250	40	290
30	200	20	220
31	200	20	220
32	150	10	160
33	150	0	150
34	100	0	100
35	100	0	100
36	50	0	50
37	50	0	50
38	50	0	50
39	50	0	50
40	70	0	70
41	80	0	80
42	100	0	100
43	100	0	100
44	120	0	120
45	180	0	180
46	200	0	200
47	300	0	300
48	400	0	400
49	500	0	500
50	600	0	600
51	700	0	700
52	750	0	750
53	800	0	800

MONTH OF CONSTRUCTION	NUMBER OF CONSTRUCTION WORKERS ON THE MAIN SITE	NUMBER OF CONNECTION CORRIDOR CONSTRUCTION WORKERS	TOTAL NUMBER OF CONSTRUCTION WORKERS – MAIN SITE AND CONNECTION CORRIDORS
54	800	0	800
55	750	0	750
56	700	0	700
57	600	0	600
58	550	0	550
59	400	0	400
60	300	0	300
61	300	0	300
62	300	0	300
63	300	0	300
64	250	0	250
65	250	0	250
66	200	0	200
67	200	0	200
68	150	0	150
69	150	0	150
71	100	0	100

15.6.8 From the above it can be seen that the peak month is month 17 in 2026 with a total of 940 workers per day.

HGVs

15.6.9 The estimated monthly HGV profile during the construction phase of the Proposed Development is shown in Table 15-11, with the peak month being highlighted for reference.

Table 15-11: Monthly HGV Profile

MONTH OF CONSTRUCTION	NUMBER OF CONSTRUCTION HGVS FOR THE MAIN SITE – TOTAL PER MONTH	NUMBER OF HGVS FOR THE CONNECTION CORRIDOR – TOTAL PER MONTH	TOTAL NUMBER OF CONSTRUCTION HGVS – MAIN SITE AND CONNECTION CORRIDOR – TOTAL PER MONTH
1	200	0	200

MONTH OF CONSTRUCTION	NUMBER OF CONSTRUCTION HGVS FOR THE MAIN SITE – TOTAL PER MONTH	NUMBER OF HGVS FOR THE CONNECTION CORRIDOR – TOTAL PER MONTH	TOTAL NUMBER OF CONSTRUCTION HGVS – MAIN SITE AND CONNECTION CORRIDOR – TOTAL PER MONTH
2	250	0	250
3	250	0	250
4	650	300	950
5	700	400	1100
6	750	500	1250
7	700	500	1200
8	950	600	1550
9	1190	500	1690
10	1440	400	1840
11	1550	500	2050
12	1610	600	2210
13	1560	600	2160
14	1050	600	1650
15	1100	600	1700
16	900	600	1500
17	730	600	1330
18	730	600	1330
19	620	500	1120
20	620	500	1120
21	630	500	1130
22	440	400	840
23	280	400	680
24	130	400	530
25	350	200	550
26	420	200	620
27	410	200	610
28	420	200	620
29	360	100	460
30	310	50	360
31	300	50	350

MONTH OF CONSTRUCTION	NUMBER OF CONSTRUCTION HGVS FOR THE MAIN SITE – TOTAL PER MONTH	NUMBER OF HGVS FOR THE CONNECTION CORRIDOR – TOTAL PER MONTH	TOTAL NUMBER OF CONSTRUCTION HGVS – MAIN SITE AND CONNECTION CORRIDOR – TOTAL PER MONTH
32	300	0	300
33	300	0	300
34	300	0	300
35	200	0	200
36	100	0	100
37	0	0	0
38	0	0	0
39	0	0	0
40	250	0	250
41	350	0	350
42	350	0	350
43	500	0	500
44	750	0	750
45	990	0	990
46	1040	0	1040
47	1240	0	1240
48	1210	0	1210
49	1210	0	1210
50	950	0	950
51	950	0	950
52	800	0	800
53	480	0	480
54	480	0	480
55	420	0	420
56	420	0	420
57	280	0	280
58	240	0	240
59	230	0	230
60	90	0	90
61	280	0	280

MONTH OF CONSTRUCTION	NUMBER OF CONSTRUCTION HGVS FOR THE MAIN SITE – TOTAL PER MONTH	NUMBER OF HGVS FOR THE CONNECTION CORRIDOR – TOTAL PER MONTH	TOTAL NUMBER OF CONSTRUCTION HGVS – MAIN SITE AND CONNECTION CORRIDOR – TOTAL PER MONTH
62	340	0	340
63	330	0	330
64	330	0	330
65	330	0	330
66	210	0	210
67	200	0	200
68	200	0	200
69	200	0	200
70	200	0	200
71	200	0	200

15.6.10 The above monthly HGV traffic flow can then be assessed as a daily flow by assuming 20 working days per month on average and this is set out in Table 15-12 with the overall peak month being highlighted for reference.

Table 15-12: Daily HGV Profile

MONTH OF CONSTRUCTION	NUMBER OF CONSTRUCTION HGVS FOR THE MAIN SITE – TOTAL PER DAY	NUMBER OF HGVS FOR THE CONNECTION CORRIDOR – TOTAL PER DAY	TOTAL NUMBER OF CONSTRUCTION HGVS – MAIN SITE AND CONNECTION CORRIDOR – TOTAL PER DAY
1	10	0	10
2	13	0	13
3	13	0	13
4	33	15	48
5	35	20	55
6	38	25	63
7	35	25	60
8	48	30	78
9	60	25	85
10	72	20	92

MONTH OF CONSTRUCTION	NUMBER OF CONSTRUCTION HGVS FOR THE MAIN SITE – TOTAL PER DAY	NUMBER OF HGVS FOR THE CONNECTION CORRIDOR – TOTAL PER DAY	TOTAL NUMBER OF CONSTRUCTION HGVS – MAIN SITE AND CONNECTION CORRIDOR – TOTAL PER DAY
11	78	25	103
12	81	30	111
13	78	30	108
14	53	30	83
15	55	30	85
16	45	30	75
17	37	30	67
18	37	30	67
19	31	25	56
20	31	25	56
21	32	25	57
22	22	20	42
23	14	20	34
24	7	20	27
25	18	10	28
26	21	10	31
27	21	10	31
28	21	10	31
29	18	5	23
30	16	3	18
31	15	3	18
32	15	0	15
33	15	0	15
34	15	0	15
35	10	0	10
36	5	0	5
37	0	0	0
38	0	0	0
39	0	0	0
40	13	0	13

MONTH OF CONSTRUCTION	NUMBER OF CONSTRUCTION HGVS FOR THE MAIN SITE – TOTAL PER DAY	NUMBER OF HGVS FOR THE CONNECTION CORRIDOR – TOTAL PER DAY	TOTAL NUMBER OF CONSTRUCTION HGVS – MAIN SITE AND CONNECTION CORRIDOR – TOTAL PER DAY
41	18	0	18
42	18	0	18
43	25	0	25
44	38	0	38
45	50	0	50
46	52	0	52
47	62	0	62
48	61	0	61
49	61	0	61
50	48	0	48
51	48	0	48
52	40	0	40
53	24	0	24
54	24	0	24
55	21	0	21
56	21	0	21
57	14	0	14
58	12	0	12
59	12	0	12
60	5	0	5
61	14	0	14
62	17	0	17
63	17	0	17
64	17	0	17
65	17	0	17
66	11	0	11
67	10	0	10
68	10	0	10
69	10	0	10
70	10	0	10

MONTH OF CONSTRUCTION	NUMBER OF CONSTRUCTION HGVS FOR THE MAIN SITE – TOTAL PER DAY	NUMBER OF HGVS FOR THE CONNECTION CORRIDOR – TOTAL PER DAY	TOTAL NUMBER OF CONSTRUCTION HGVS – MAIN SITE AND CONNECTION CORRIDOR – TOTAL PER DAY
71	10	0	10

Total Construction Traffic – Workers and HGVs

15.6.11 The profile of the monthly construction worker trips from Table 15-10 (with the number of workers in each month assumed to be the number of workers attending site each day) and the daily HGV trips from Table 15-12 can then be combined to provide the total construction traffic profile as shown in Table 15-13.

Table 15-13: Daily Worker and HGV Profile – Peak Month

MONTH OF CONSTRUCTION	TOTAL NUMBER OF CONSTRUCTION WORKERS	TOTAL NUMBER OF CONSTRUCTION HGVS	TOTAL CONSTRUCTION NUMBERS
1	20	10	30
2	50	13	63
3	50	13	63
4	90	48	138
5	100	55	155
6	130	63	193
7	140	60	200
8	160	78	238
9	240	85	325
10	280	92	372
11	420	103	523
12	520	111	631
13	640	108	748
14	740	83	823
15	840	85	925
16	890	75	965
17	940	67	1007
18	920	67	987
19	870	56	926
20	820	56	876

MONTH OF CONSTRUCTION	TOTAL NUMBER OF CONSTRUCTION WORKERS	TOTAL NUMBER OF CONSTRUCTION HGVS	TOTAL CONSTRUCTION NUMBERS
21	720	57	777
22	670	42	712
23	520	34	554
24	420	27	447
25	420	28	448
26	420	31	451
27	400	31	431
28	300	31	331
29	290	23	313
30	220	18	238
31	220	18	238
32	160	15	175
33	150	15	165
34	100	15	115
35	100	10	110
36	50	5	55
37	50	0	50
38	50	0	50
39	50	0	50
40	70	13	83
41	80	18	98
42	100	18	118
43	100	25	125
44	120	38	158
45	180	50	230
46	200	52	252
47	300	62	362
48	400	61	461
49	500	61	561
50	600	48	648
51	700	48	748
52	750	40	790

MONTH OF CONSTRUCTION	TOTAL NUMBER OF CONSTRUCTION WORKERS	TOTAL NUMBER OF CONSTRUCTION HGVS	TOTAL CONSTRUCTION NUMBERS
53	800	24	824
54	800	24	824
55	750	21	771
56	700	21	721
57	600	14	614
58	550	12	562
59	400	12	412
60	300	5	305
61	300	14	314
62	300	17	317
63	300	17	317
64	250	17	267
65	250	17	267
66	200	11	211
67	200	10	210
68	150	10	160
69	150	10	160
70	100	10	110
71	100	10	110

15.6.12 From the above it can be seen that the peak month is month 17 in 2026 with a total of 940 workers and 67 HGVs per day.

15.6.13 This assumption will be reassessed in the ES when cumulative developments are included to ensure that the most appropriate design year is being assessed.

15.6.14 Based upon the above, the trip generation can then be set out as follows.

Construction – Worker Car Trips

15.6.15 The total number of construction workers is split between the Main Site and the Connection Corridors with an estimate of the number of construction worker vehicle trips per day. This is set out in Table 15-14.

Table 15-14: Construction Worker Car Trips

WORKER LOCATION	NUMBER OF WORKERS	NUMBER OF WORKER VEHICLE TRIPS PER DAY (ONE WAY)	TWO WAY DAILY FLOW
Main Site	800	320	680
Daily Organisation vehicles	-	20	
Connection Corridors	-	140	280
Total	800	480	960

15.6.16 In the peak month of construction, it is assumed that all Connection Corridor sites will be active, three to the south of the River Tees (Teesworks, Wilton and Tees Crossing) and four to the north (Seal Sands, North Tees, Greatham and Billingham). This can then be assumed to be split evenly based on the number of active sites, with 57% of traffic to the north of the River Tees and 43% of traffic to the south of the River Tees as shown in Table 15-15.

Table 15-15: Connection Corridor Traffic North and South of the River Tees – Construction Workers

CONSTRUCTION ACTIVITY	TOTAL WORKER VEHICLES	NORTH OF THE RIVER TEES (57%)	SOUTH OF THE RIVER TEES (43%)
Connection Corridors	140 (29%)	80	60
Main Site	340 (71%)	N/A	340
TOTAL	480 (100%)	80	400

Construction – Worker Numbers (1,300 workers analysis)

15.6.17 However, based upon information supplied by the client, this PEI Report will be assessed based upon a maximum number of 1,300 workers on site in order to present a worst-case assessment, rather than the peak of 940 as given in Table 15-13 above, and this assumption will be revisited at the ES stage.

15.6.18 The assessment within this PEI Report will then use the same car sharing assumptions and splits between the Main Site and Connection Corridor worker as set out above in Table 15-15.

15.6.19 The peak workforce given above in Table 15-13 is 940 workers in month 17 with a total number of construction worker car trips of 480 as set out in Table 15-15. Therefore, it has been assumed that there will be an average of 2 workers per car, with a new total of 1,300 workers resulting in 650 car trips (one way) or 1,300 two way (650 arriving and 650 departing).

15.6.20 From Table 15-15, 71% of workers will travel to and from the Main Site and 29% will travel to and from the Connection Corridor. Therefore, based upon 650 car trips, 460 will travel to and from the Main Site and 190 will travel to the Connection Corridors.

15.6.21 In addition, based upon the percentage split between the Connection Corridors to the north and south of the Tees, as set out in Table 15-15, the 190 workers will be split 108 to the north of the Tees and 82 to the south of the Tees.

15.6.22 This can then be set out as follows.

Table 15-16: Construction Worker Car Trips (1,300 workers)

WORKER LOCATION	NUMBER OF WORKERS	NUMBER OF WORKER VEHICLE TRIPS PER DAY (ONE WAY)	TWO WAY DAILY FLOW
Main Site	1,300	460	920
Daily Organisation vehicles			
Connection Corridors		190	380
Total	1,300	650	1,300

Table 15-17: Connection Corridor Traffic North and South of the River Tees – Construction Workers (1,300 workers)

CONSTRUCTION ACTIVITY	TOTAL WORKER VEHICLES	NORTH OF THE RIVER TEES (57%)	SOUTH OF THE RIVER TEES (43%)
Connection Corridors	190 (29%)	108	82
Main Site	460 (71%)	N/A	340
TOTAL	650 (100%)	108	542

15.6.23 Based on the above, the daily worker profile for the peak months of construction is set out in Table 15-18.

Table 15-18: Daily Worker Profile – Peak Month of Construction (1,300 workers)

HOUR BEGINNING	% OF DAILY INBOUND	% OF DAILY OUTBOUND	WORKER ARRIVALS	WORKER DEPARTURES	TWO WAY DAILY TRAFFIC FLOW
06:00	34%	2%	221	13	234
07:00	25%	2%	163	13	176
08:00	5%	2%	33	13	46

HOUR BEGINNING	% OF DAILY INBOUND	% OF DAILY OUTBOUND	WORKER ARRIVALS	WORKER DEPARTURES	TWO WAY DAILY TRAFFIC FLOW
09:00	4%	2%	26	13	39
10:00	4%	3%	26	20	46
11:00	4%	3%	26	20	46
12:00	5%	4%	33	26	59
13:00	4%	4%	26	26	52
14:00	3%	3%	20	20	39
15:00	2%	3%	13	20	33
16:00	2%	5%	13	33	46
17:00	3%	15%	20	98	117
18:00	3%	35%	20	228	247
19:00	2%	16%	13	104	117
20:00	0%	1%	0	7	7
21:00	0%	0%	0	0	0
TOTAL	100%	100%	650	650	1,300

15.6.24 From the above, there will be 46 and 117 two-way vehicle movements associated with construction worker trips in the peak month in the traditional weekday AM and PM peak periods respectively, with most workers arriving and departing outside of these times.

HGV Trips

15.6.25 During the peak month (month 17), the volume of construction HGVs on the network is predicted to be 1,330 (730 of which are associated with the Main Site, and 600 of which are associated with the Connection Corridors). This equates to 67 HGVs per day (rounded from 66.5) (37 of which are associated with the Main Site and 30 of which are associated with the Connection Corridors), based on 20 working days per month.

15.6.26 As was assumed for construction workers, for the peak month of construction (month 17), it is assumed that all Connection Corridor sites will be active, three to the south of the River Tees (Teesworks, Wilton and Tees Crossing) and four to the north (Seal Sands, North Tees, Greatham and Billingham). This can then be assumed to be split evenly based on the number of active sites, with 57% of traffic to the north of the Tees and 43% of traffic to the south of the River Tees as shown in Table 15-19.

Table 15-19: Main Site and Connection Corridors HGV Monthly Traffic North and South of the River Tees

CONSTRUCTION ACTIVITY	TOTAL HGVS	NORTH OF THE TEES (57%)	SOUTH OF THE TEES (43%)
Connection Corridors	600	343	257
Main Site	730	N/A	730
TOTAL	1,330	343	987

15.6.27 The daily HGV movement can then be given as follows in Table 15-20.

Table 15-20: Main Site and Connection Corridors HGV Daily Traffic North and South of the River Tees

CONSTRUCTION ACTIVITY	TOTAL HGVS	NORTH OF THE TEES (57%)	SOUTH OF THE TEES (43%)
Connection Corridors	30	17	13
Main Site	37	N/A	37
TOTAL	67	17	50

15.6.28 Based on the above, the HGV daily profile is outlined in Table 15-21, with any minor errors in the data being as a result of rounding.

Table 15-21: Daily HGV Profile – Peak Month of Construction

HOUR BEGINNING	% OF DAILY INBOUND	% OF DAILY OUTBOUND	HGV ARRIVALS	HGV DEPARTURES	TWO WAY DAILY TRAFFIC FLOW
600	0%	0%	0	0	0
700	9%	8%	6	6	12
800	9%	8%	6	6	12
900	9%	8%	6	6	12
1000	9%	8%	6	6	12
1100	9%	8%	6	6	12
1200	9%	8%	6	6	12
1300	9%	8%	6	6	12
1400	9%	8%	6	6	12
1500	9%	8%	6	6	12

HOUR BEGINNING	% OF DAILY INBOUND	% OF DAILY OUTBOUND	HGV ARRIVALS	HGV DEPARTURES	TWO WAY DAILY TRAFFIC FLOW
1600	9%	8%	6	6	12
1700	9%	8%	6	6	12
1800	0%	8%	0	0	0
1900	0%	0%	0	0	0
2000	0%	0%	0	0	0
2100	0%	0%	0	0	0
TOTAL	100%	100%	67	67	133

15.6.29 From the above, the construction phase will generate around 12 HGV movements two way (6 arrivals and 6 departures) per hour during the day.

Trip Distribution and Vehicle Assignment

Distribution

15.6.30 With such a large and specialised workforce required for the construction of the Proposed Development, it is likely that much of the workforce will be sourced from beyond the daily commutable catchment area.

15.6.31 Experience at other similar construction sites has confirmed this and recent transport assessments prepared for other large energy developments have allowed for a split of permanent home-based site staff and transient staff staying in temporary accommodation.

15.6.32 As set out in Chapter 18: Socio-Economics and Land Use (PEI Report, Volume I) it has been assumed that the majority of the employment generated would be occupied by people living in the Middlesbrough and Stockton Travel To Work Area (TTWA) and as such leakage effects are considered to be low and has been set at 25%. The assessment has then been based upon 75% of workers being local and 25% being transient.

15.6.33 The 25% transitory workers will either engage in short term rentals or will reside in B&Bs, small hotels, caravan sites or private households located in the vicinity of the Proposed Development Site. From experience elsewhere on similar types of construction sites, these staff prefer to locate as close to the site as possible to minimise travel time and costs. They also tend to find accommodation in groups and lift share to site (or use contractors' minibuses).

15.6.34 The distribution of the permanent resident construction workforce traffic to the network has been based on a gravity model and the number of those employed in construction in towns and cities (ONS, 2011), within a 45-minute drive time of the site. The catchment area includes the districts of Redcar and Cleveland, Middlesbrough, Stockton-on-Tees, Hartlepool, Darlington, Sunderland and parts of

County Durham. Table 15-20 shows the permanent resident workforce distribution and the number of workers this equates to at the peak month of construction (month 14).

15.6.35 Tables 15-22 and 15-23 below take the worker population and their distance from the Proposed Development Site, and calculate a factor based upon the distance so that those locations further away (e.g., Hartlepool and Darlington) have a lower 'attractiveness' compared to those locations that are closer (e.g., Redcar and Cleveland and Middlesborough). The distribution therefore favours locations closer to the Proposed Development Site – these are shown within Figure 15-4: Traffic Routes (PEI Report, Volume II).

Table 15-22: Permanent Resident Construction Worker Distribution

DISTRICT	CONSTRUCTION WORKER POPULATION	DISTANCE (MILES)	FACTOR (1/D)	POP X FACTOR	PERCENTAGE (%) DISTANCE
Darlington	3,743	22	0.045	170	5%
Durham	9,100	32	0.031	284	8%
Hartlepool	3,764	22	0.045	171	5%
Middlesborough	4,620	6	0.167	770	22%
Redcar and Cleveland	4,976	4	0.250	1244	25%
Stockton-on-Tees	7,200	12	0.083	600	17%
Sunderland	9,345	35	0.029	267	8%

15.6.36 In contrast, the distribution of the transitory workforce has been undertaken based on a gravity model and the estimated number of accommodation beds available in the surrounding districts within a 30-minute travelling distance of the Proposed Development Site. This information has been based upon the methodology adopted and agreed for the NZT project, which was based on the Visit Britain Accommodation Stock Audit (2016), and if required this will be revisited for the ES. Table 15-23 shows the transitory workforce distribution and the number of workers this equates to at the peak month of construction.

Table 15-23: Transitory Resident Construction Worker Distribution

DISTRICT	NUMBER OF BEDS	DISTANCE (MILES)	FACTOR (1/D)	POP X FACTOR	PERCENTAGE (%) DISTANCE
Darlington	3,545	22	0.045	161	13%
Hartlepool	946	22	0.045	43	3%
Middlesborough	2,870	6	0.167	478	37%

DISTRICT	NUMBER OF BEDS	DISTANCE (MILES)	FACTOR (1/D)	POP X FACTOR	PERCENTAGE (%) DISTANCE
Redcar and Cleveland	1,484	4	0.250	371	29%
Stockton-on-Tees	2,711	12	0.083	226	18%

Trip Assignment

15.6.37 Five key routes have been identified that are most likely to be taken by construction workers travelling to and from work and are as follows:

- Route 1: Via A66 onto A1085 Trunk Road, Site Access;
- Route 2: Via A1085 Broadway onto A1085 Trunk Road, Site Access;
- Route 3: Via B1380 High Street onto A1053 Greystone Road, A1085 Trunk Road, Site Access;
- Route 4: Via A174 onto A1053 Greystone Road, A1085 Trunk Road, Site Access; and
- Route 5: Via A1085 Trunk Road, Site Access.

15.6.38 The key routes are shown on Figure 15-4: Traffic Routes (PEI Report, Volume II).

15.6.39 The assignment of the permanent resident construction workforce to the network is summarised in Table 15-24 and is consistent with the assessment of other developments within the local area.

15.6.40 With the total construction workers vehicle number of 960 being split 720 (75%) permanent and 240 (25%) temporary across both the Main Site and the Connection Corridors.

15.6.41 For this assessment, it is assumed that all construction HGVs associated with the Main Site will arrive/depart the site from Tees Dock Road via the A1053/A66/Tees Dock Road roundabout. At the junction with the A1053/A66/Tees Dock Road, it is assumed that 50% will head west on the A66 and 50% will head south on the A1053 then west on the A174.

15.6.42 Similarly, and again reflecting the unknown location of construction material, all Connection Corridor traffic to the north of the River Tees has been assigned along Seaton Carew Road to the junction with Haverton Hill Road and the B1275, where it is assumed it will split 50/50 to access the A19.

15.6.43 This 50/50 split is a conservative approach and reflects the unknown location of construction material during the preparation of this PEIR. If additional information becomes available this will be further assessed during the EIA. HGV routes are presented on Figure 15-2: HGV Routes to and from the Main Site (PEI Report, Volume II).

15.6.44 Table 15-25 presents the route assignment for transient resident workforce, with any minor errors in the numbers being due to rounding.

Table 15-24: Catchment Area and Route Assignment for Permanent Resident Workforce

ROUTE	CATCHMENT AREA	PERCENTAGE (%) CONSTRUCTION WORKER VEHICLES	MAIN SITE WORKERS	CONNECTION CORRIDOR WORKERS	TOTAL DAILY TRAFFIC FLOW
Route 1: Via A66 onto A1085 Trunk Road turning left into Site Access	Redcar & Cleveland Darlington Durham Hartlepool Middlesbrough Stockton-on-Tees Sunderland	50%	345	142	488
Route 2: Via A1085 Broadway onto A1085 Trunk Road turning left into Site Access	Redcar & Cleveland Middlesbrough	17%	117	48	166
Route 3: Via B1380 High Street onto A1053 Greystone Road, A1085 Trunk Road turning left into Site Access	Redcar & Cleveland Middlesbrough	7%	48	20	68
Route 4: Via A174 onto A1053 Greystone Road, A1085	Middlesbrough	6%	41	17	59

ROUTE	CATCHMENT AREA	PERCENTAGE (%) CONSTRUCTION WORKER VEHICLES	MAIN SITE WORKERS	CONNECTION CORRIDOR WORKERS	TOTAL DAILY TRAFFIC FLOW
Trunk Road turning left into Site Access					
Route 5: Via A1085 Trunk Road turning right into Site Access	Redcar & Cleveland	20%	138	57	195
Total			691	284	975

Table 15-25: Catchment Area and Route Assignment for Transient Resident Workforce

ROUTE	CATCHMENT AREA	PERCENTAGE (%) CONSTRUCTION WORKER VEHICLES	MAIN SITE WORKERS	CONNECTION CORRIDOR WORKERS	TOTAL DAILY TRAFFIC FLOW
Route 1: Via A66 onto A1085 Trunk Road turning left into Site Access	Darlington Hartlepool Middlesbrough Stockton-on-Tees	49%	113	46	159
Route 2: Via A1085 Broadway onto A1085 Trunk Road turning left into Site Access	Middlesbrough	22%	51	21	72

ROUTE	CATCHMENT AREA	PERCENTAGE (%) CONSTRUCTION WORKER VEHICLES	MAIN SITE WORKERS	CONNECTION CORRIDOR WORKERS	TOTAL DAILY TRAFFIC FLOW
Route 3: Via B1380 High Street onto A1053 Greystone Road, A1085 Trunk Road turning left into Site Access	-	0%	0	0	0
Route 4: Via A174 onto A1053 Greystone Road, A1085 Trunk Road turning left into Site Access	-	0%	0	0	0
Route 5: Via A1085 Trunk Road turning right into Site Access	Redcar & Cleveland	29%	67	27	94
Total			230	95	325

15.6.45 All the construction workers assignment has been based on the geographic split of population within a 45-minute drive time of the Proposed Development Site for permanent home-based workers and a 30-minute drive time for transitory workers.

15.6.46 The total construction traffic on each link can be assigned as follows in Table 15-26.

Table 15-26: Construction Traffic Flows

LINK		DAILY CONSTRUCTION TRAFFIC	
		TOTAL VEHICLES	TOTAL HGVS
1	A1085 Trunk Road, 100 m east of Ennis Road	289	0
2	A1085 Trunk Road, 1,340 m south of West Coatham Lane	989	99
3	A1042 Kirkleatham Lane, 85 m south of Staintondale Avenue	145	0
4	A1085 Trunk Road, 0.5 km north of A1053 Tees Dock Road	989	99
5	A1085 Broadway, 230 m east of Birchington Avenue	238	0
6	A1380 High Street, 50 m east of Lackenby Lane	57	0
7	A66, 140 m east of Whitworth Road	677	49
8	A1046 Port Clarence Road, 20 m north of Beech Terrace	108	17
9	A178 Seaton Carew Road, 530 m north of Huntsman Drive	215	34
10	Unnamed Road, 720 m east of A178 Seaton Carew Road	251	34
11	A1053 Greystone Road, 600 m north of the A174/ A1053 Greystones roundabout	155	49
12	A174 (West of Greystone Roundabout), 1 km west of the A174/A1053 Greystones roundabout.	98	49
13	B1275 Belasis Avenue, 1.6 km west of its junction with Cowpen Bewley Road	108	17
14	A1185, 800 m west of A178 Seaton Carew Road	70	34

Peak Construction Year Assessment

Based on the vehicle assignment, Table 15-27 summarises the likely changes in link flows within the Study Area for the assessment year peak of construction, 2026. As noted, this does not yet contain flows for committed developments which will be included in the EIA and reported in the ES.

Table 15-27: 2026 Baseline Plus Proposed Peak of Construction Development Two Way Annual Average Daily Traffic (AADT) Traffic Flows

LINK		2026 BASELINE		CONSTRUCTION TRAFFIC (1,300 WORKERS)		PERCENTAGE INCREASE (%)	
		TOTAL VEHICLES	TOTAL HGVS	TOTAL VEHICLES	TOTAL HGVS	TOTAL VEHICLES	TOTAL HGVS
1	A1085 Trunk Road, 100 m east of Ennis Road	12,948	1,107	289	0	2.2	0.0
2	A1085 Trunk Road, 1,340 m south of West Coatham Lane	15,176	1,345	989	99	6.5	7.3
3	A1042 Kirkleatham Lane, 85 m south of Staintondale Avenue	12,438	804	145	0	1.2	0.0
4	A1085 Trunk Road, 0.5 km north of A1053 Tees Dock Road	16,940	2,122	989	99	5.8	4.7
5	A1085 Broadway, 230 m east of Birchington Avenue	8,537	549	238	0	2.8	0.0
6	A1380 High Street, 50 m east of Lackenby Lane	10,375	871	57	0	0.5	0.0
7	A66, 140 m east of Whitworth Road	20,955	3,863	677	49	3.2	1.3
8	A1046 Port Clarence Road, 20 m north of Beech Terrace	8,030	945	108	17	1.3	1.8
9	A178 Seaton Carew Road, 530 m north of Huntsman Drive	8,243	1,053	215	34	2.6	3.3

LINK		2026 BASELINE		CONSTRUCTION TRAFFIC (1,300 WORKERS)		PERCENTAGE INCREASE (%)	
		TOTAL VEHICLES	TOTAL HGVS	TOTAL VEHICLES	TOTAL HGVS	TOTAL VEHICLES	TOTAL HGVS
10	Unnamed Road, 720 m east of A178 Seaton Carew Road	4,437	907	251	34	5.7	3.8
11	A1053 Greystone Road, 600 m north of the A174/ A1053 Greystones roundabout	15,177	1,468	155	49	1.0	3.4
12	A174 (West of Greystone Roundabout), 1 km west of the A174/A1053 Greystones roundabout.	33,502	2,042	98	49	0.3	2.4
13	B1275 Belasis Avenue, 1.6 km west of its junction with Cowpen Bewley Road	2,586	76	108	17	4.2	22.6
14	A1185, 800 m west of A178 Seaton Carew Road	5,961	1,082	70	34	1.2	3.2

15.6.47 As set out in Table 15-27, and based upon the robust analysis of a total of 1,300 workers on site, the increase in traffic flows, including HGVs, associated with the construction of the Proposed Development will result in some increases in traffic flows, and in accordance with GEART (IEA, 1993), only those sensitive links that show a greater than 10% increase in total traffic flows (or HGV component) or, for all other links, a greater than 30% increase in total traffic or the HGV component, are considered when assessing the traffic impacts upon receptors.

15.6.48 The link predicted to experience an increase of above 10% is Link 13: B1275 Belasis Avenue located approximately 1.6 km west of its junction with Cowpen Bewley Road, which has a low level of sensitivity and an increase in HGV movements of 22.6%.

15.6.49 It should be noted that B1275 Belasis Avenue (link 13) has a low level of sensitivity, as set out in Table 15-1. Using the matrix provided in Table 15-3 to assess the significance of transportation effects associated with construction traffic at the peak of construction. Taking into account the link sensitivity and the associate traffic impacts, effects are assessed to be Negligible (Not Significant).

Severance

15.6.50 The predicted change in total traffic associated with the construction of the Proposed Development is considerably less than 30% on each link road (Very Low impact). Therefore, the severance effect upon all links is assessed to be Negligible (Not Significant).

Pedestrian Amenity

15.6.51 The change in total traffic (or HGV component) during the construction of the Proposed Development is considerably less than 50% on each link road (Very Low impact). Therefore, the effect upon pedestrian amenity for all links is assessed to be Negligible (Not Significant).

Fear and Intimidation

15.6.52 The change in total traffic during the construction of the Proposed Development is considerably less than 30% on each link road (Very Low impact). Therefore, the effect upon fear and intimidation for all links is assessed to be Negligible (Not Significant).

Highway Safety

15.6.53 Accident data for the most recent five years has been acquired for the Study Area and is summarised in Section 15.4. The statistics provide information on the location and severity of each PIA. Given that the level of increase in traffic flows resulting from the construction of the Proposed Development on road links is negligible, the effect on highway safety is also considered to be Negligible (Not Significant).

Driver Delay

15.6.54 Driver delay is only likely to be significant where the existing Study Area highway network is at or close to capacity. This is not considered to be required at this stage but will be confirmed following the outcome of further assessment in the ES to be submitted with the DCO Application.

Operation

15.6.55 Operational workforce peak numbers are expected to be a maximum of approximately 130 people (staff) on a shift basis to be spread over a 24-hour period. Although this could increase during periods of periodic maintenance to around 400 workers on site, which is considered to be relatively infrequent and would be managed in liaison with the Local Highway Authority so as to minimise any impacts.

15.6.56 Once the Proposed Development is operational, traffic flows are expected to be very low – significantly lower than those experienced during the construction period. The overall transportation effects during the operation of the Proposed Development are therefore not considered to be severe.

Decommissioning

15.6.57 Detailed information regarding the decommissioning of the Proposed Development is yet not available, given that its design life is 25 years. There are expected to be some traffic movements associated with the removal (and recycling) of material arising from decommissioning and potentially the import of materials for land restoration and re-instatement. However, vehicle numbers are not expected to be any higher than those experienced during the construction period.

15.6.58 Current baseline data collected for the purposes of this assessment is not valid at the year of decommissioning. However, as it is unlikely that baseline traffic figures on local roads will reduce appreciably, it is considered that the percentage increase in traffic due to decommissioning would be Negligible, and that overall, the effects of decommissioning traffic would be no greater than that of construction traffic. Notwithstanding, a DTMP would be implemented during the decommissioning phase to control the impact and routing of HGVs. Therefore, no further assessment will be undertaken.

15.7 Mitigation and Enhancement Measures

Construction

15.7.1 No additional mitigation measures other than those as set out in Section 15.5 are considered necessary. However, the construction contractors will review options for the use of rail and water transport when sourcing construction materials. The contractors will also review the use of rail travel for construction staff accessing the Proposed Development Site potentially using the existing Redcar British Steel railway station (currently mothballed).

Operation

15.7.2 Once operational, the Proposed Development is not considered to have any material impact upon the operation of the local highway network, although any impact could be minimised through the adoption of a Travel Plan, which will be prepared and agreed prior to any occupation.

15.8 Limitations and Difficulties

15.8.1 This preliminary assessment is based upon data and design information available at the time of writing. The baseline traffic data from 2019 is assumed to be representative of current conditions.

15.8.2 For the purposes of this preliminary assessment no allowance has been made for the delivery of construction materials by water or rail (in order to assess the worst-case construction road traffic impact), but the construction contractors will review options for the use of rail and water when sourcing construction materials.

15.8.3 In addition, this preliminary assessment, beyond the NZT project, does not include 'committed developments' in relation to peak construction traffic. This will be reported in the ES, and any developments that are relevant to traffic and transportation will be assessed and included if required.

15.8.4 Driver delay has not been undertaken at this preliminary stage but will be reviewed as part of the future ES assessment and included if required. A separate Transport Assessment, Framework CTMP and Framework CWTP will be presented as appendices to the ES chapter and submitted with the DCO Application.

15.9 Residual Effects and Conclusions

Construction

15.9.1 The additional traffic predicted to be generated by the construction of the Proposed Development based upon a robust analysis of 1,300 workers (both the Main Site and Connection Corridors) will result in small, temporary increases of traffic flows, including HGVs, on the roads leading to the Main Site and the Connection Corridors north and south of the River Tees.

15.9.2 In line with the significance criteria presented herein, the residual effects of construction traffic on all road sections and junctions are anticipated to be Negligible (Not Significant). Notwithstanding this, a number of traffic management measures will be implemented during the Proposed Development's construction phase to minimise traffic impacts upon the local road network.

Operation

15.9.3 The generation of traffic during the operation of the Proposed Development is not considered to be severe and has not been assessed within this PEIR.

Decommissioning

15.9.4 The decommissioning of the Proposed Development is not expected to generate traffic levels any higher than during the construction phases, and therefore no assessment has been included within this PEIR.

15.10 Combined Impact with Net Zero Teesside

15.10.1 An assessment of the likely impact of the Proposed Development combined with that of NZT is set out as follows, assuming that the peaks of construction coincide. Although, within the NZT ES (AECOM, 2021), the peak of construction is given as

occurring in 2024. By including the peak traffic flow for both projects, the worst-case has been assessed.

15.10.2 From Tables 16-14 and 16-15 of the NZT ES, the peak construction traffic can be set out as follows in Table 15-27.

Table 15-27: Net Zero Teesside Peak of Construction Traffic

LINK		TOTAL VEHICLES	TOTAL HGVS
1	A1085 Trunk Road, 100 m east of Ennis Road	411	0
2	A1085 Trunk Road, 1,340 m south of West Coatham Lane	1219	10
3	A1042 Kirkleatham Lane, 85 m south of Staintondale Avenue	200	0
4	A1085 Trunk Road, 0.5 km north of A1053 Tees Dock Road	1219	10
5	A1085 Broadway, 230 m east of Birchington Avenue	324	0
6	A1380 High Street, 50 m east of Lackenby Lane	846	0
7	A66, 140 m east of Whitworth Road	129	45
8	A1046 Port Clarence Road, 20 m north of Beech Terrace	44	0
9	A178 Seaton Carew Road, 530 m north of Huntsman Drive	85	45
10	Unnamed Road, 720 m east of A178 Seaton Carew Road	130	10
11	A1053 Greystone Road, 600 m north of the A174/ A1053 Greystones roundabout	130	10
12	A174 (West of Greystone Roundabout), 1 km west of the A174/A1053 Greystones roundabout.	130	10
13	B1275 Belasis Avenue, 1.6 km west of its junction with Cowpen Bewley Road	130	10
14	A1185, 800 m west of A178 Seaton Carew Road	130	0

15.10.3 The combined 2026 future baseline from Table 15-21 can then be combined with the above NZT construction flows as follows in Table 15-28.

Table 15-28: 2026 Baseline plus Net Zero Teesside Peak of Construction Traffic

LINK		TOTAL VEHICLES	TOTAL HGVS	HGV PERCENTAGE (%)
1	A1085 Trunk Road, 100 m east of Ennis Road	13,162	1,107	8.4%
2	A1085 Trunk Road, 1,340 m south of West Coatham Lane	15,933	1,444	9.1%
3	A1042 Kirkleatham Lane, 85 m south of Staintondale Avenue	12,545	804	6.4%
4	A1085 Trunk Road, 0.5 km north of A1053 Tees Dock Road	17,696	2,221	12.5%
5	A1085 Broadway, 230 m east of Birchington Avenue	8,713	549	6.3%
6	A1380 High Street, 50 m east of Lackenby Lane	10,417	871	8.4%
7	A66, 140 m east of Whitworth Road	21,468	3,912	18.2%
8	A1046 Port Clarence Road, 20 m north of Beech Terrace	8,114	962	11.9%
9	A178 Seaton Carew Road, 530 m north of Huntsman Drive	8,411	1,088	12.9%
10	Unnamed Road, 720 m east of A178 Seaton Carew Road	4,631	941	20.3%
11	A1053 Greystone Road, 600 m north of the A174/ A1053 Greystones roundabout	15,304	1,518	9.9%
12	A174 (West of Greystone Roundabout), 1 km west of the A174/A1053 Greystones roundabout.	33,587	2,092	6.2%
13	B1275 Belasis Avenue, 1.6 km west of its junction with Cowpen Bewley Road	2,670	93	3.5%
14	A1185, 800 m west of A178 Seaton Carew Road	6,022	1,117	18.5%

15.10.1 Based on the above, Table 15-29 summarises the likely changes in link flows within the Study Area for the assessment year peak of construction, 2026. As noted, this only includes the NZT as a committed development and other sites will be included with the ES.

Table 15-29: Net Zero Teesside Cumulative Impact with the Proposed Development

LINK		2026 BASELINE PLUS NET ZERO TEESSIDE		CONSTRUCTION TRAFFIC FOR THE PROPOSED DEVELOPMENT		PERCENTAGE INCREASE (%) IN TRAFFIC FLOWS WITH THE ADDITION OF THE PROPOSED DEVELOPMENT	
		TOTAL VEHICLES	TOTAL HGVS	TOTAL VEHICLES	TOTAL HGVS	TOTAL VEHICLES	TOTAL HGVS
1	A1085 Trunk Road, 100 m east of Ennis Road	13,162	1,107	289	0	2.2	0.0
2	A1085 Trunk Road, 1,340 m south of West Coatham Lane	15,933	1,444	989	99	6.1	6.8
3	A1042 Kirkleatham Lane, 85 m south of Staintondale Avenue	12,545	804	145	0	1.1	0.0
4	A1085 Trunk Road, 0.5 km north of A1053 Tees Dock Road	17,696	2,221	989	99	5.5	4.4
5	A1085 Broadway, 230 m east of Birchington Avenue	8,713	549	238	0	2.7	0.0
6	A1380 High Street, 50 m east of Lackenby Lane	10,417	871	57	0	0.5	0.0
7	A66, 140 m east of Whitworth Road	21,468	3,912	677	49	3.1	1.3
8	A1046 Port Clarence Road, 20 m north of Beech Terrace	8,114	962	108	17	1.3	1.8

LINK		2026 BASELINE PLUS NET ZERO TEESSIDE		CONSTRUCTION TRAFFIC FOR THE PROPOSED DEVELOPMENT		PERCENTAGE INCREASE (%) IN TRAFFIC FLOWS WITH THE ADDITION OF THE PROPOSED DEVELOPMENT	
		TOTAL VEHICLES	TOTAL HGVS	TOTAL VEHICLES	TOTAL HGVS	TOTAL VEHICLES	TOTAL HGVS
9	A178 Seaton Carew Road, 530 m north of Huntsman Drive	8,411	1,088	215	34	2.5	3.2
10	Unnamed Road, 720 m east of A178 Seaton Carew Road	4,631	941	251	34	5.4	3.6
11	A1053 Greystone Road, 600 m north of the A174/ A1053 Greystones roundabout	15,304	1,518	155	49	1.0	3.3
12	A174 (West of Greystone Roundabout), 1 km west of the A174/A1053 Greystones roundabout.	33,587	2,092	98	49	0.3	2.4
13	B1275 Belasis Avenue, 1.6 km west of its junction with Cowpen Bewley Road	2,670	93	108	17	4.0	18.4
14	A1185, 800 m west of A178 Seaton Carew Road	6,022	1,117	70	34	1.2	3.1

15.10.2 In accordance with GEART (IEA, 1993), only those sensitive links that show a greater than 10% increase in total traffic flows (or HGV component) or, for all other links, a greater than 30% increase in total traffic or the HGV component, are considered when assessing the traffic impacts upon receptors.

15.10.3 The only link predicted to experience an increase of above 10% is Link 13 B1275 Belasis Avenue, which has a low level of sensitivity and an increase in HGV movements of 18.4%.

15.10.4 However, it should be noted that Link 13 B1275 Belasis Avenue has a low level of sensitivity, as set out in Table 15-1. Therefore, it is considered that all the links within the Study Area fall below the GEART screening thresholds. However, the assessment uses the matrix provided in Table 15-3 to assess the significance of transportation effects associated with construction traffic at the peak of construction. Taking into account the link sensitivity and the associate traffic impacts, effects are assessed to be Negligible (Not Significant).

Severance

15.10.5 The predicted change in total traffic associated with the construction of the Proposed Development is considerably less than 30% on each link road (Very Low impact). Therefore, the severance effect upon all links is assessed to be Negligible (Not Significant).

Pedestrian Amenity

15.10.6 The expected change in total traffic (or HGV component) is considerably less than 50% on each link road (Very Low impact) during the construction of the Proposed Development. Therefore, the effect upon pedestrian amenity for all links is assessed to be Negligible (Not Significant).

Fear and Intimidation

15.10.7 The predicted change in total traffic is considerably less than 30% on each link road (Very Low impact) during the construction of the Proposed Development. Therefore, the effect upon fear and intimidation for all links is assessed to be Negligible (Not Significant).

Highway Safety

15.10.8 Accident data for the most recent five years has been acquired for the Study Area and is summarised in Section 15.4. The statistics provide information on the location and severity of each PIA. Given that the level of increase in traffic flow resulting from the construction of the Proposed Development on road links is Negligible, the effect on highway safety is also considered to be Negligible (Not Significant).

15.10.9 In line with the significance criteria presented herein, the residual effects of construction traffic on all road sections and junctions, when considering the cumulative effect with the inclusion of the construction traffic associated with NZT, are anticipated to be Negligible (Not Significant). Notwithstanding this, a number of traffic management measures will be implemented during the Proposed Development's construction phase to minimise traffic impacts upon the local road

network. The ES will include the full list of committed developments which will be included, and this section of the assessment will be updated accordingly.

15.11 References

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